

THE IRON AGE

THURSDAY, JULY 4, 1901.

380
10

THE SHARON STEEL COMPANY.

It was the privilege recently of a representative of *The Iron Age* to visit the works of the Sharon Steel Company, at Sharon, Pa., at present comprising blast furnace, steel plant, rod, wire and wire nail mills. Reference to the accompanying ground plan will give a very clear idea of the lay out of the plant. There is also a ten-mill tin plate plant completed, with ten more mills building, the latter owned by the Sharon Tin Plate Company, which is a subsidiary interest of the Sharon Steel Company. This works, which is one of the most complete steel plants ever built, has attracted more than usual attention from the fact that reports have been repeated-

Schneider was formerly with the National Tube Company, at McKeesport; then with the Carnegie Steel Company, at Duquesne Steel Works; later with the Ohio Steel Company, at Youngstown, and finally appointed chief engineer for the Sharon Steel Company. A short time after the first organization was effected John Stevenson, Jr., of New Castle, who had disposed of his interests in the Shenango Valley Steel Company, the New Castle Wire Nail Company and the Shenango Tin Plate Company, became identified with the Sharon Steel Company, in the capacity of general manager. Sharon was selected as a site for the new works of the Sharon

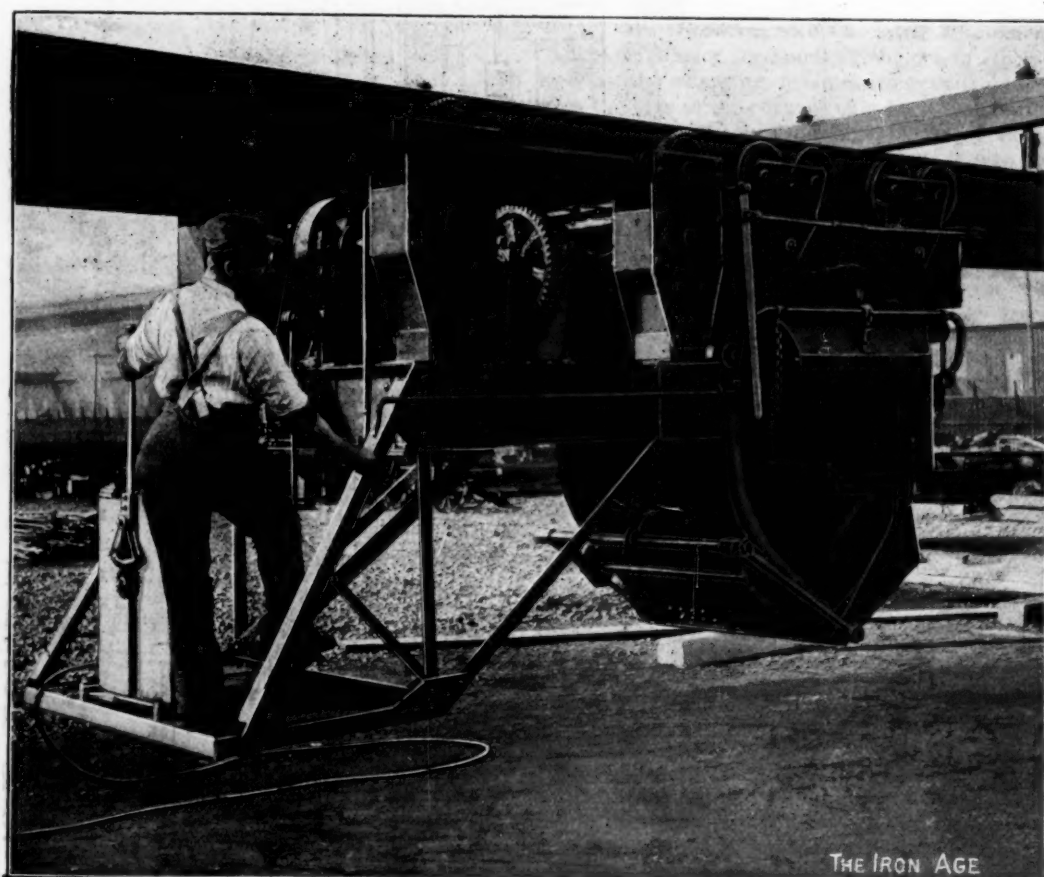


Fig. 5.—Charging Larry.

THE SHARON STEEL COMPANY, SHARON, PA.

ly started that it would in time be acquired by the United States Steel Corporation. We may state that at this time the plant is entirely owned by the Sharon Steel Company, and no negotiations whatever are on for a sale or control of their output to any other interest. When the National Steel Company was organized in the spring of 1899, one of the works taken over was the open hearth steel plant of the Buhl Steel Company at Sharon, Pa. This plant was largely owned by Frank H. Buhl, who had associated with him some other capitalists. It was only a few months after the sale of the Buhl works to the National Steel Company, or, to be more explicit, on October 3, 1899, that the first organization of the Sharon Steel Company was effected. Frank H. Buhl was appointed president and R. Schneider chief engineer. Mr.

Steel Company on account of its exceptional railroad facilities, also from the fact that plenty of ground was available at moderate cost, and the general adaptation of the land to the requirements of a steel plant. About 400 acres of ground was purchased from farmers, who were tilling it. The first plans of the Sharon Steel Company contemplated only a blast furnace, basic open hearth plant, blooming and billet mills. However, when Mr. Stevenson came into the concern actively, which was in December, 1899, it was then decided to extend the initial works by the addition of rod, wire and nail mills, with all accessories. About the same time it was also decided to add a tin plate plant, and this decision brought about the organization of the Sharon Tin Plate Company, which is an identified interest of the Sharon

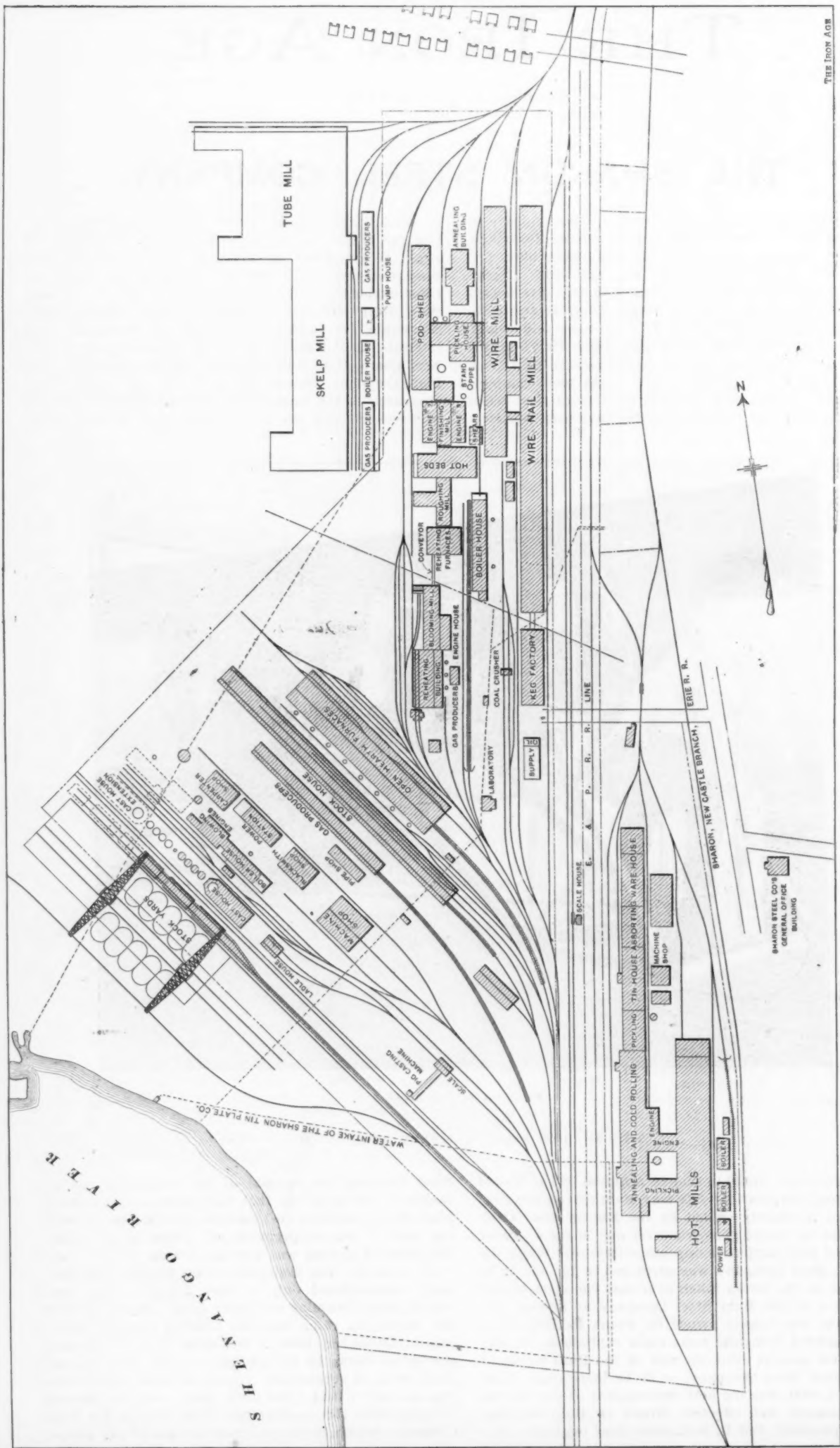


Fig. 1.—Plan of the Works of the Sharon Steel Company.

THE SHARON STEEL COMPANY, SHARON, PA.

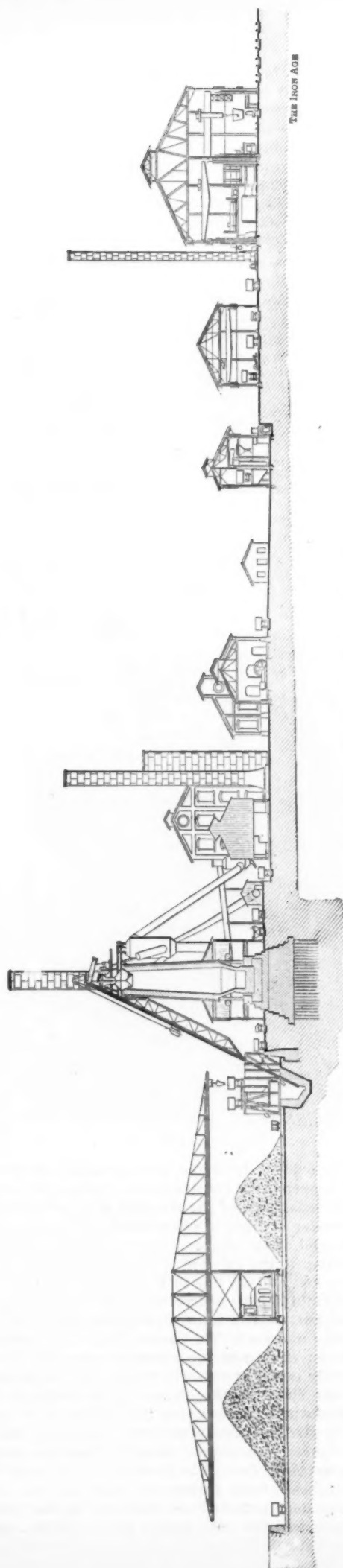


Fig. 2.—Cross Section through Blast Furnace and Open Hearth Steel Plant.

THE SHARON STEEL COMPANY, SHARON, PA.

Steel Company, and purchased from them 22 acres of ground on which to erect their plant.

The Sharon Steel Company broke ground for their new works on November 20, 1899, the first work being to excavate for the blast furnace and drive piles for its foundation. The ground was not very favorable for the purpose required, and test holes were sunk at different places to the depth of 120 feet, but no rock was encountered. In excavating for the foundations the ground was found to be made up first of yellow clay, then blue clay, gravel and sand. Piles measuring 9 inches at the bottom were driven $2\frac{1}{2}$ feet apart. A gridiron was made on top of these piles with heavy planks, and on top of these were laid heavy concrete beds, which formed the foundation for the blast furnace. The contracts for the iron work for the blast furnace, the buildings and the blooming mills were made in October, 1899, the iron work for the blast furnace going to Riter-Conley Mfg. Company of Pittsburgh, while the Sharon Steel Company did the brick work. The size of the blast furnace is 105 feet from bottom of the hearth, 22 feet in diameter at the bosh and 15 feet 6 inches at the hearth. The stack is equipped with four Kennedy-Cowper two-pass fire brick stoves, 100×22 feet in size and lined with Kennedy hexagon brick. It is equipped with 16 tuyeres, has Scott cooling plates and a Walter Kennedy patented automatic skip.

Ore Handling and Charging Machines.

The machinery for handling the ore in stock yard, as well as the charging machines for conveying the ore from the bins to the furnace skip hoist, was built and installed by the Brown Hoisting Machinery Company of Cleveland, Ohio. The stock yard crane is what is known as the Brown patented balance cantilever type, and of similar design to their cranes operated on the Chicago Drainage Canal. The cantilever bridge of this crane has a total length over all of 354 feet 6 inches, with a trolley travel 336 feet 6 inches. The height from the stock yard floor to the bottom chords of the bridge tramway is about 57 feet. The cantilever bridge or runway for the trolley is mounted on a steel frame or pier, supported on a carriage which carries the engine and motor house. The whole structure is mounted on wheels with gears to move it along the rails and tracks, laid on the stock yard floor. It is operated by electric power, and all its motions—namely, hoisting, crane travel and trolley travel—are controlled by one operator. The crane is built to handle 5 net tons suspended from the hook of the trolley.

In stocking ore the contents of the railroad cars are first dumped into the bins shown on the plan Fig. 4. From these bins the ore is drawn off through a series of chutes in the rear, into buckets carried on electrically operated transfer cars. These cars each with four full buckets are then moved to any desired part of the stock yard, when the buckets are picked up by the bridge operator, conveyed along the tramway and dumped at any point desired. The buckets automatically discharge the ore by turning over, when the empty bucket rights itself and is ready for refilling by the time it has been returned and replaced on the transfer car.

The operation of taking the ore from the stock pile and filling the bins is likewise performed by the crane operator. For this purpose there is used a shovel bucket of $3\frac{1}{2}$ tons capacity made of a special form and adapted for scraping or shoveling ore from the piles by bridges of the Brown type. The ore is conveyed in this bucket after being hoisted by the operator along the bridge tramway and dumped either directly into the bins, or else into cars on the trestle above the bins, by which it is carried to the bin to be filled. This last operation, however, of using transfer cars on the top of trestle, is only intended to be used in the event of the ore pile being situated at some considerable distance from the bin to be filled, the object being to avoid moving the bridge each time the scraper or shovel bucket is used. The cuts, Figs. 5 and 6, show special charging larries and electric locomotive used for taking the ore from the bins to the blast furnace skip car. Each charging larry has a capacity of 75 cubic feet, and is arranged to run on two I-beam tracks, suspended from the bins. Each larry is equipped with a Fairbanks four-lever scale of the usual blast furnace

type and of 10,000 pounds capacity. The electric locomotives for operating the charging larries are likewise arranged to be suspended from the same track as those on which the larries run. Each locomotive is provided with necessary couplings, and a suitable platform or cage for the operator. The whole arrangement of locomotive and larries is such that it is intended that one man can readily attend to all the operations of drawing the ore from the bins, weighing and dumping it into the skip car, and coupling and uncoupling the cars. The operation of coupling is automatic, and that of uncoupling is performed by the operator without leaving his position on the cage. The height of the operator's platform from the ground is such that he can at any time easily step from it to operate the valves or chutes of the bins, as well as empty the larries. The coke is drawn directly from the bins situated on each side of the furnace hoist into the skip cars. The valves on the coke bin chutes

the narrow front wheels turning over a knuckle and running onto a level piece of track just above the receiving hopper, the broad rear wheels being extended far enough to travel up in a straight line on auxiliary rails which are placed for that purpose. By this means the skip is tilted up in a position to discharge its contents in the upper hopper smoothly and without any concussion or the heavy resulting strains on the hoisting rope and engine which occur in some filling devices. In the meantime the other skip is traveling to the bottom and is ready to receive its portion of the furnace charge, and in turn commences its upward trip as quickly as the material can be placed in the skip. Consequently there is no delay at the top of the furnace, such as frequently occurs where top fillers are used and the operation of the hoist is delayed until the filler has taken the charge and dumped it into the furnace and brought back the empty barrow. The arrangement for securing a good distribu-

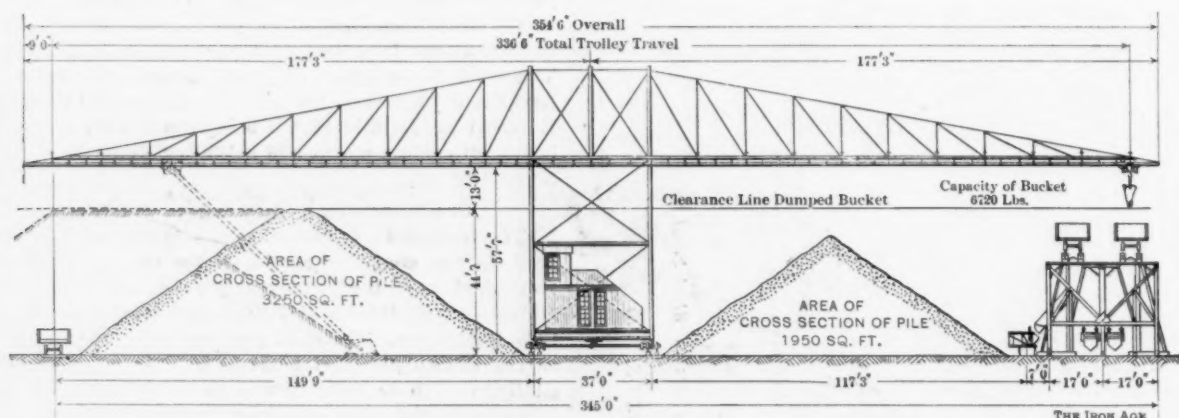


Fig. 3.—Side Elevation of the Brown Cantilever Crane Hoisting and Conveying Machinery.

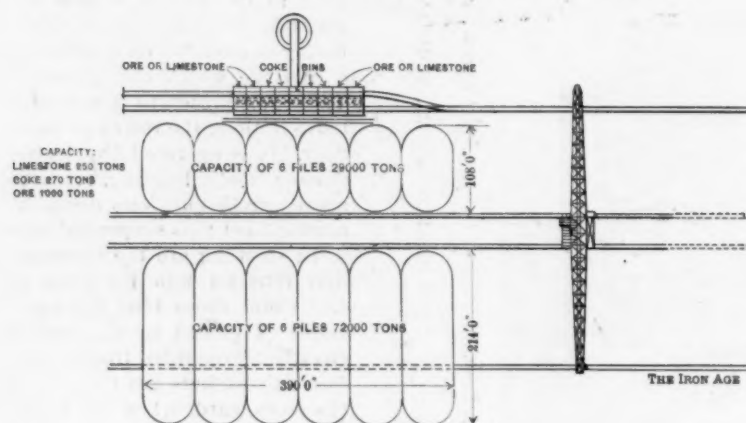


Fig. 4.—Plan of Stock Handling Appliances.

THE SHARON STEEL COMPANY, SHARON, PA.

are operated by the operator of the furnace hoist. It is the intention to dump the coke direct from the cars into the bins, but a stock of coke may also be carried in the stock yard and handled by the cantilever bridge in the same manner as the ore.

The Filling Arrangement

consists of a double skipway and two skips, which are filled at the charging floor of the stock yard partly from bins and partly from a car. One of the cars is filled at the bottom while the other is at rest at the top. The cars are operated by means of a crane hoist, installed by the Otis Elevator Company, located at the opposite side of the furnace from the stock yard and placed in the engine room, where it gets better care on account of being in charge of skilled workmen, and also where it is more conveniently located to the power. When the proper mixture of burden has been mixed into the skip, which is at the bottom, it is lifted to the top and dumped into the upper hopper just as a mine skip dumps its contents,

tion will be evident from the accompanying drawings, the upper hopper being constructed in such a way as to prevent the separation of the material with reference to its being coarse or fine; in other words, to prevent the coarse material of the charge as it comes from the skip from bounding to the far side of the main hopper, as is usually the case, and the fine stuff dribbling down on the side of the main hopper nearest the skip, which usually takes place, particularly in rainy weather, when the ore comes up like molasses. The shape of the upper hopper and the doors closing in the upper hopper—which has been variously called at different places the orange peel, chestnut burr, clamshell, &c.—is such as to discharge the contents of the upper hopper onto the bell below in such a way as to give a perfectly uniform distribution under all circumstances. The hopper capacity above the orange peel bell is 450 cubic feet. The lower hopper is about the same. Each cast of the furnace is about 120 tons, the tapping being done in ladle cars, which are hauled direct by locomotive into the open hearth plant. While, tem-

porarily, the Sharon Steel Company will have to buy a small part of their ore and all of their coke, yet in a short time they will be in position to furnish all the raw material they use. We may say here that the Sharon Steel Company have acquired sufficient ore properties, among which is the Brodie mine, to insure the concern a sufficient supply of ore for from 50 to 75 years, making them entirely independent of the ore market, with the exception of a small amount of old range, which they will buy in the open market. The limestone for the blast furnace will be taken from quarries owned by the company and located 20 miles from the works. The stack

case of any temporary shut down of the steel works by accident or otherwise. The boiler house is equipped with 4500 horse-power Geary water tube boilers, built by the Oil City Boiler Works of Oil City, Pa. These are arranged in single batteries of 500 horse-power each. The boilers are fired by gas, a 6-foot gas main leading to them. The wind is furnished by two Porter-Hamilton compound blowing engines, 42 and 80 x 84 x 60 inch stroke, built by the William Tod Company of Youngstown, Ohio. These engines run 42 to 45 revolutions and are capable of delivering 30,000 cubic feet of air per minute and up to a pressure of 25 pounds per square

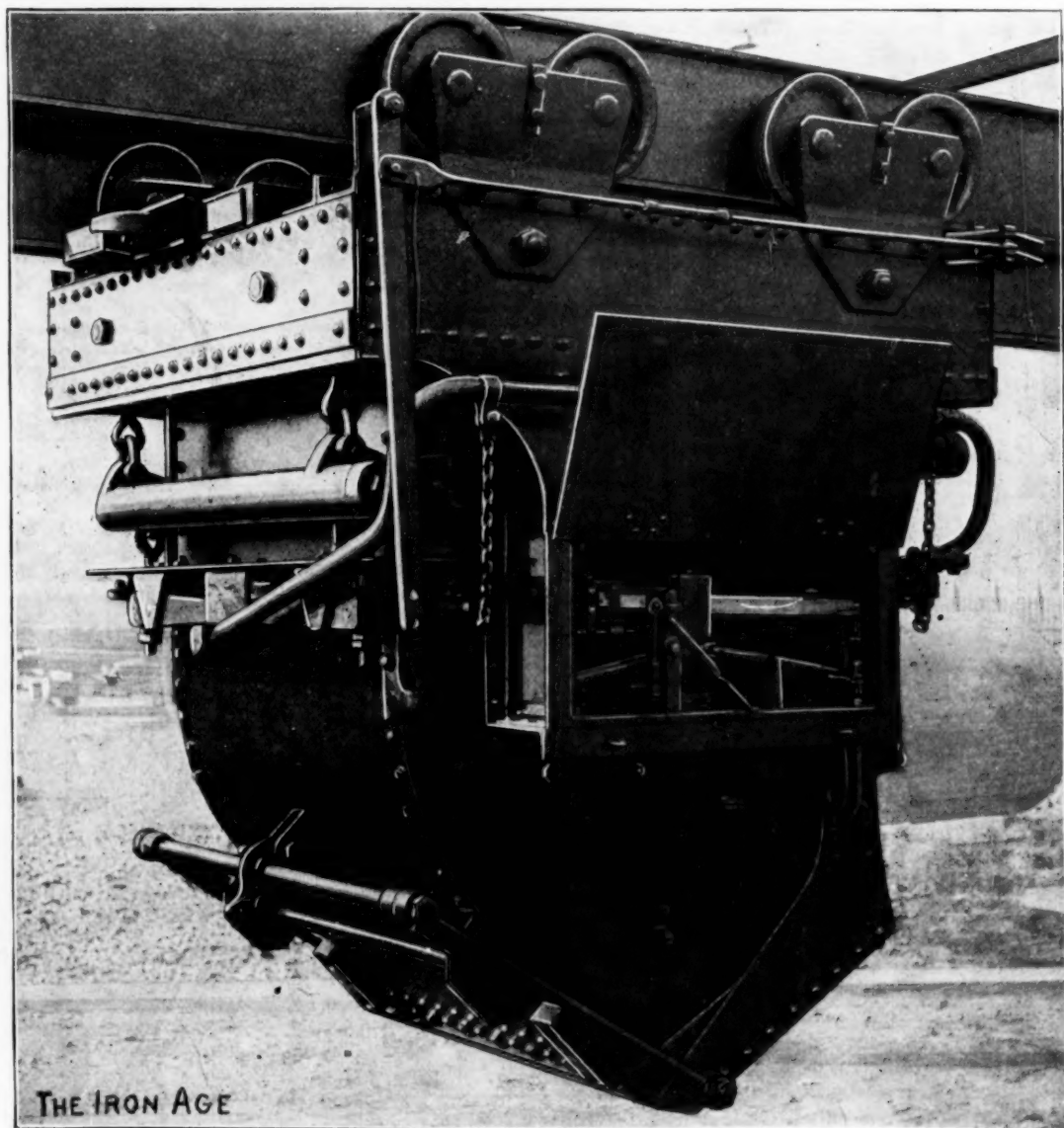


Fig. 6.—Charging Lorry.

THE SHARON STEEL COMPANY, SHARON, PA.

is nearly completed and will be ready for blast about July 15, when ore begins to come down.

The Cinder Handling Arrangement.

The concern have installed a unique arrangement for handling the cinder, consisting of a crane, running the cinder from the furnace to gutters, where it comes into contact with water and is granulated, falling into a reservoir, which has a capacity for holding about 300 tons. From this reservoir the cinder is taken up by a clamshell bucket and revolving crane, furnished by the Webster, Camp & Lane Machine Company of Akron, Ohio, and loaded in cars, either to be hauled away or used for filling up low, marshy land around the works. A pig casting machine, installed by Heyl & Patterson of Pittsburgh, is located about 600 feet from the furnace and this will be used to take care of Sunday metal, or in

inch. These engines are located in a brick structure, 88 x 56 feet in size.

The Ore Bins.

The ore bins are built of heavy oak timbers, this construction being cheaper than when built of steel plates and also very durable. There are eight of these bins, and they are charged on two sides, and are large enough to insure a three days' supply of ore. The coke and ore larries are entirely of steel, and are square in construction, having beveled bottom and side ore drop each. Each larry has a capacity of 75 cubic feet, and each is provided with a scale for weighing the load. The ore yard is surrounded by a 10-foot wall.

Raw Material Supply.

It is the intention of the Sharon Steel Company to erect a sufficient number of by-product coke ovens to in-

sure a full supply of coke, not only for running the present blast furnace, but also a second stack, should it be decided to build another, which now seems likely. These ovens will be of the Semet-Solvay or Otto Hoffman type. In the meantime the concern have made arrangements for a supply of coke until these ovens have been built. The supply of coal will be obtained from mines owned by the company and located about 15 miles from South Sharon. The coal will be crushed in a crusher plant at the mines, the lump coal being crushed for the gas producers and other purposes, and the slack for boiler firing.

The blast furnace is equipped with a 3000 horse-power Worthington condensing apparatus, which condenses steam from the blast furnace and electrical building. The feed water for the blast furnace boiler house is

furnaces is that they are built above ground, resting on iron columns, making them easier of access when repairs are being made, which insures a more even temperature and also does away with casting pits. The credit for this idea in construction belongs to R. Schneider, chief engineer, and also to Nevin McConnell, superintendent of the plant. There are two pouring platforms equipped with 50-ton ladles, the output of each furnace being 15 to 18 ingots per heat. Each furnace has a battery of four water seal gas producers, each 13 feet high and 10 feet in diameter, built by the Sharon Steel Company, from their own designs. The gas producer house is provided with coal storage bins, from which coal is taken up by electric traveling conveyor, installed by Heyl & Patterson of Pittsburgh, to bins above the gas producers.

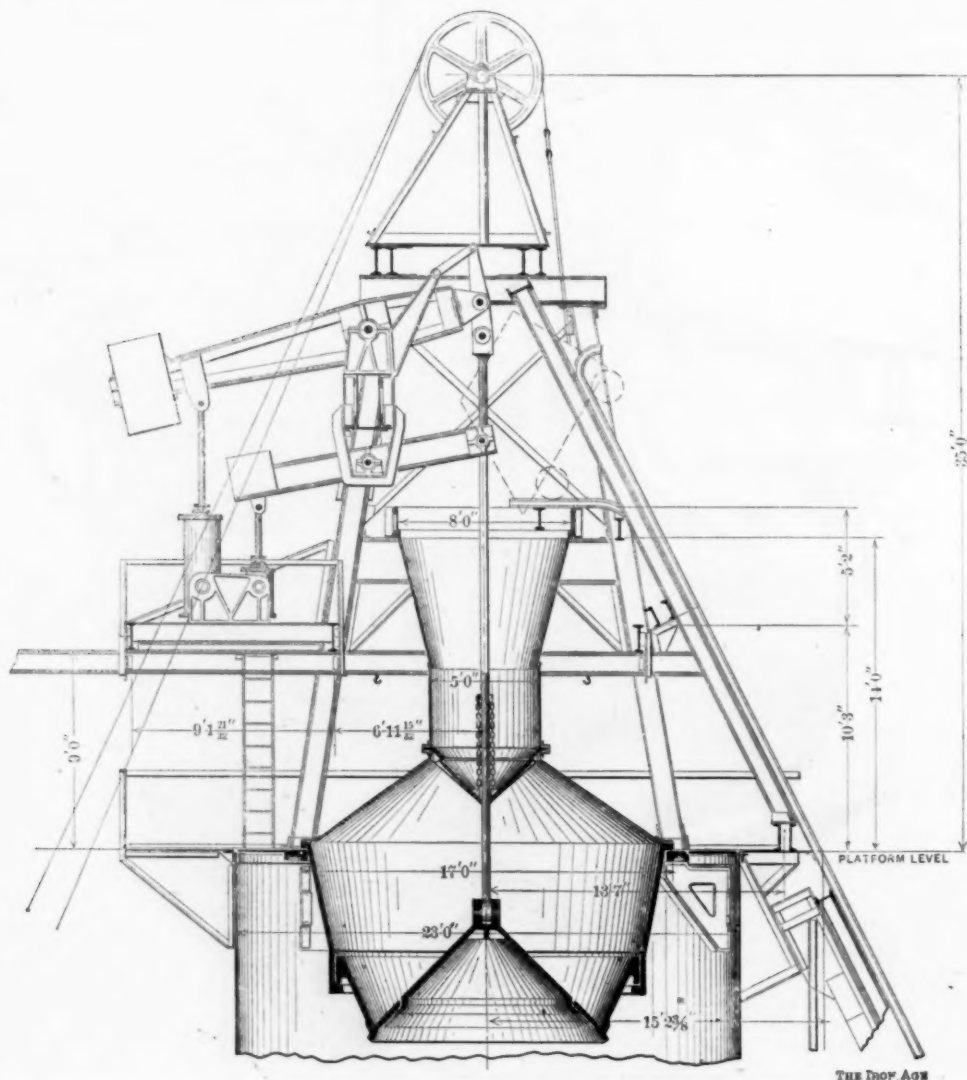


Fig. 7.—The Blast Furnace Filling Arrangement.

THE SHARON STEEL COMPANY, SHARON, PA.

heated by a Cookson heater, by means of exhaust steam from the pumps and part of electrical power house engines.

The Basic Open Hearth Steel Plant

consists of eight 50-ton open hearth furnaces and is contained in a main building of steel frame construction 803 feet long and 123 feet wide. There is an elevated charging platform and the furnaces are provided with regenerative chambers for air and gas, having reversing valves operated by means of hydraulic cylinder. The charging side of the furnaces is equipped with a 4-ton Morgan crane, while the pouring side is equipped with a 75-ton crane of the same design. The furnaces are charged with a Wellman-Seaver charging machine and are also equipped with water cooled doors and frames. A unique feature in the erection of the open hearth

From these bins the coal is taken to the gas producers by an automatic feeding device, also installed by Heyl & Patterson. Another innovation made by the Sharon Steel Company in the building of their works is that the stock house for the open hearth furnaces is covered, affording protection from the weather to the materials in the stock house and also to the men employed there. The stock house is a steel and brick building 1000 feet long by 60 feet wide, and in it is stored the pig iron and scrap used in the open hearths. The stock house is equipped with two heavy shears used for cutting up billets and rails to the proper lengths for loading into the charging boxes. The stock house is also equipped with four railroad tracks, one being elevated. Two of these tracks are used for materials coming in to be unloaded, and two for materials loaded and going out to the open

hearth. At the end of the stock house is a mixer house, for grinding limestone and other refractories. Next to the stock house is the main machine shop, of steel and brick, 114 feet wide and 143 feet long. The machine shop is commanded by a 20-ton Morgan electric crane and is fitted out with modern iron working tools, consisting of planers, boring mills, shapers and other tools, some of which are of very heavy design. The machine shop is equipped with two engines for driving the shafting. There is also a blacksmith shop 75 x 190 feet and a

The Blooming Mill

is 38 inches in diameter, and with table and manipulator was built by the Lloyd Booth Company of Youngstown, Ohio. The shear at the end of the mill was furnished by Mackintosh, Hemphill & Co. of Pittsburgh. The mill is driven by a reversing engine built by the William Tod Company, Youngstown, Ohio, 46 x 60 inch cylinder diameter and 60-inch stroke. The mill is designed to roll 24-inch ingots and has already done some initial rolling and with very satisfactory results. The mill housings are

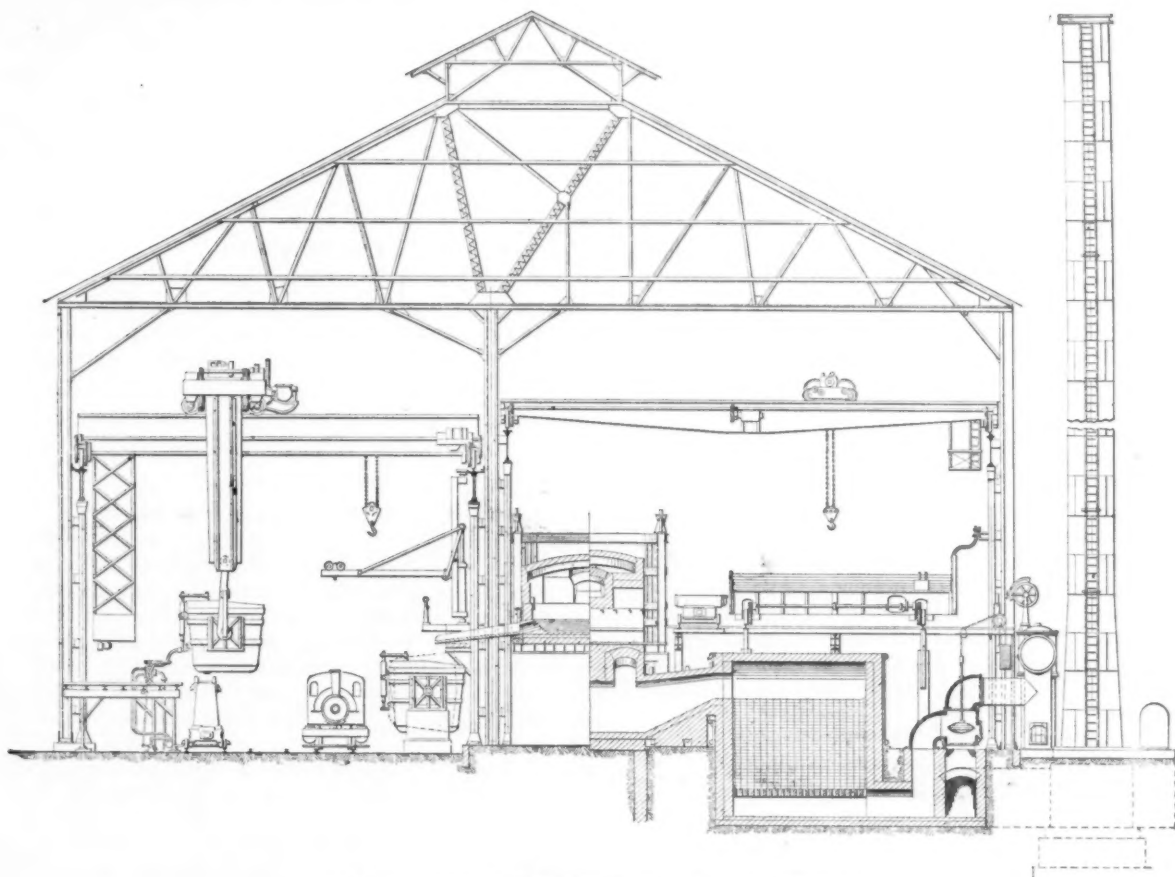


Fig. 8.—Cross Section through Open Hearth Building.

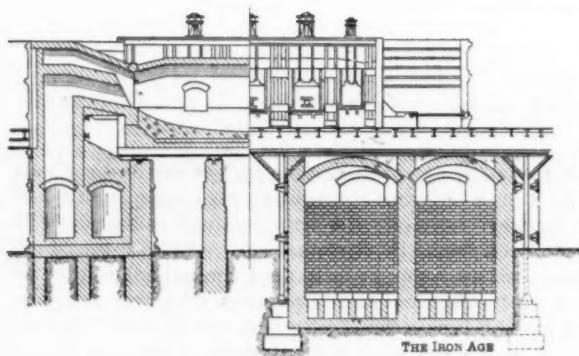


Fig. 9.—Section of Open Hearth Furnace.

THE SHARON STEEL COMPANY, SHARON, PA.

carpenter shop equipped with modern wood working tools throughout.

The ingots are taken from the open hearth building to the stripper building, where they are stripped by an Aiken ingot extractor. They are then weighed and taken to the heating furnaces by means of a Morgan ingot crane. There are three of these heating furnaces, fired by four gas producers of the same type as referred to above. The heating furnaces are four-hole pit furnaces, each pit holding six ingots. The same ingot crane takes the ingots from the heating furnaces to an ingot tilter of Sharon Steel Company design, which takes them to the approach table at the blooming mill.

cast iron, rolls cast steel 38 inches diameter, and the top roll is operated from above by hydraulic cylinder, with a rack and pinion, the cylinder in turn being operated by 500 pounds hydraulic pressure. The top roll is counterbalanced from below by a system of weights and levers. The mill spindles are cast steel, 20 inches diameter by 10 inches long; pinions are also steel, 38 inches P. D., and have 11 V teeth in each. All the housing fillings are of cast steel babbitted. This mill is designed to run at an average speed of 70 revolutions per minute. The mill tables, as shown on general arrangement, are about 275 feet over all, from ingot tilter to billet shear. The blooming mill tables are each driven by a 12 x 12 inch Crane reversing engine, and have rollers 14 inches diameter, spaced 28-inch centers, which run at a speed of 103 revolutions per minute. The run out table, which extends from ingot tilter to the end of blooming mill table on roller's side of mill, is driven by a 50 horse-power motor, which runs 550 revolutions per minute. The rollers on this table are 14 inches diameter and run at 103 revolutions per minute. The snear table, which extends from the end of blooming mill table on catcher's side of the mill to billet shear, is driven by one 35 horse-power motor and one 25 horse-power motor. The rollers on this table are also 14 inches diameter and run at 103 revolutions per minute. The manipulator is of the Kennedy type, operated by three hydraulic cylinders, with a water pressure of 500 pounds per square inch. The whole mill is designed in general with a view of securing the greatest strength and speed with a minimum cost for operation. After receiving the required number of passes on the blooming mill the bloom is cut by a Mackintosh, Hemphill shear and is

brought over by means of an overhead conveyor to the finishing train, where it passes into two Morgan continuous heating billet furnaces. After leaving these it is taken through either the tin bar or billet mill, the roughing and finishing being continuous on two separate mills. The entire product of the billet mill goes to the hot beds, after which the billets are either loaded into cars for shipment into the open market or are taken by conveyors into the Morgan continuous rod mills. The billet yard has two steam traveling yard cranes, built by the Brown Hoisting Machinery Company of Cleveland, Ohio. The billets intended for the Sharon Tin Plate Company works go direct from the blooming mill over a conveyor to the continuous heating furnaces, thence to the tin bar mill and are rolled into tin bars, after which they are taken by railroad track to the reheating furnaces in the tin mill.

The Billet Mill.

The billet mill is of the continuous type, built by the Morgan Construction Company of Worcester, Mass. The billets as received are $3\frac{1}{2} \times 7\frac{1}{2}$ inches by 7 feet long, weighing about 600 pounds. These billets are carried by a special conveyor from the bloom shears and are charged into two Morgan automatic gravity discharge continuous billet heating furnaces, in which they are

inch rolls driven by a 22-foot belt wheel. The belts are 4-foot face. Between the roughing and finishing trains is interposed an Edwards flying shear for cropping off split ends. After getting the required number of passes in the finishing trains the rods are taken to two sets of four rod reels of the Morgan-Stevenson flying pipe pattern with inclined laying platform and traveling coil conveyor. The latter delivers the coils to the pickling house. After leaving the pickling house the rods are taken to the annealing furnace building, and after being annealed are either shipped to the open market or taken to the wire mill. The pickling house is equipped with two pickling cranes and one baker. A galvanizing department is also located at one end of the pickling house, the equipment consisting of two annealing furnaces, necessary water and acid tanks, two spelter frames and two take up frames for 20 wires each. The annealing house contains one set of annealing pots and one set of cooling pots, and is commanded by two revolving steam cranes.

The Wire Mill

is 780 feet long with a 70-foot span, and there is room for 150 wire benches. This building also contains the galvanizing department, which is located at one end of it. In the wire mill is an overhead trolley commanding

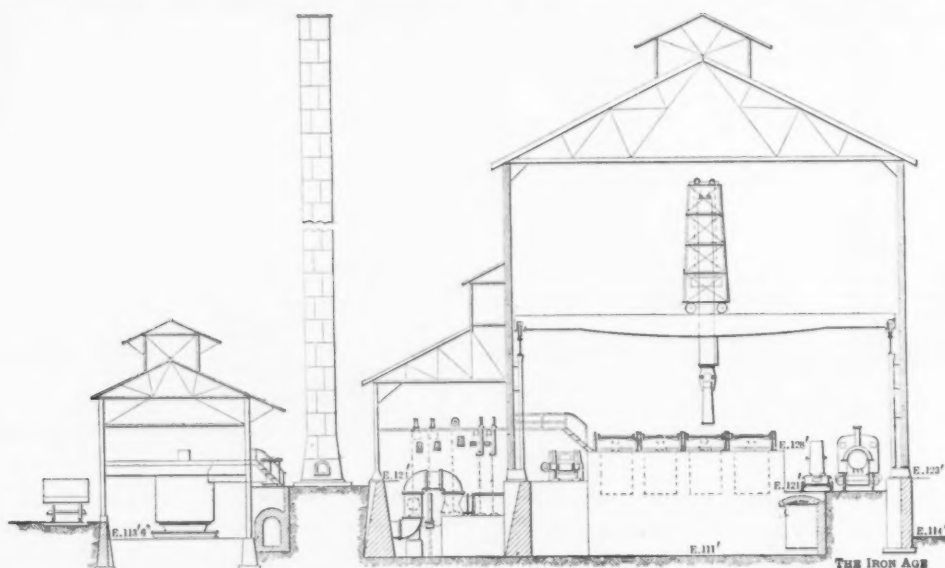


Fig. 10.—Cross Section of Producer and Reheating Buildings.

THE SHARON STEEL COMPANY, SHARON, PA.

heated preparatory to rolling. As the billets reach the proper degree of heat they are dropped from the end of the furnace upon a conveyor, which carries them to the billet mill. The Morgan continuous billet mill is in the installation made up of six stands of rolls, of which three pairs are 16 inches in diameter and three pairs 13 inches in diameter. The mill is driven by a pair of $28\frac{1}{2} \times 56 \times 62$ inch compound Buckeye engines. The mill is commanded by a 10-ton electric crane made by the Cleveland Crane & Car Company. In this mill billets $1\frac{1}{4}$ inches and larger may be rolled.

Two intermediate furnaces of the Siemens type are designed to receive billets 30 feet long, to supply

The Rod Mills,

of which there are two, each using a $1\frac{1}{4}$ -inch by 30-foot billet, which they are designed to reduce to a No. 5 rod.

The rod mills are of the Morgan continuous type and are contained in a steel frame building 530 feet from the reel shed and reheating furnace building and from 45 to 190 feet wide. The rod mills are driven by two pairs of $32\frac{1}{2} \times 60 \times 60$ inch Buckeye engines, with 82-inch rope wheel driven by 16-foot pulley, which drives part of the mill. The other part of the mill is driven by a 4-foot wide belt on the same shaft. The rod mill contains six stands of 10-inch roughing rolls, driven by a 16-foot rope wheel, and a finishing train of eight stands of 10-

each row of wire benches. The mill is driven by a pair of $22 \times 22 \times 40$ cross compound condensing engines, of the Buckeye type. In the wire and nail mills power is transmitted from the engines to line shafting by 2-inch ropes. In fact rope power is used throughout the entire plant of the Sharon Steel Company wherever possible. This was an innovation first introduced by John Stevenson, Jr., at the rod, wire and nail mills of the New Castle Wire Nail Company, at New Castle, Pa., and with most satisfactory results. Later the rope power system was utilized in the building of the 30-mill tin plate plant of the Shenango Tin Plate Company, at New Castle, Pa.

The Wire Nail Mill

is contained in a steel frame and brick building, 1260 feet long by 70 feet wide, in which will be installed 400 wire nail machines grouped in four rows, 250 of which have already been installed. These wire nail machines will be of the German or percussion pattern. Power is furnished the wire nail mill by overhead shafting, which is driven by a $22 \times 22 \times 40$ cross compound engine of the Buckeye type. The kegs are made in their own keg factory, which is 240 feet long by 70 feet span. The kegs are taken by a keg conveyor to the loading department and after being filled, weighed and headed are taken to the shipping department and there loaded into cars.

The Electrical Building

is 50 feet wide and 170 feet long, and has in connection with it a repair shop. The main building is equipped with one 5-ton and one 3-ton hand cranes and has four 600 horse-power Russell steam engines, direct connected to two Siemens-Halske and two Westinghouse multiple generators for 400 kw. each.

Steam and Water Supply.

The steam for the blooming, billet, rod, wire and nail mills is generated in a special boiler house, 50 feet wide by 306 feet long, by means of 16 500 horse-power Geary water tube boilers, which are located in this special boiler house. It is also equipped with storage bins and electrically driven traveling coal conveyor, which latter discharges the coal directly on the grates, of the boilers. The water for the entire plant is taken up from the Shenango River by gravity system, which throws it from the intake of the water system to settling basin, from which water is taken by means of water pumps of the Worthington type, to run one 100 x 20 foot and one 70 x 15 foot stand pipes. From these stand pipes the water is distributed over the whole plant. The works are also equipped with a sufficient number of hydrants to insure ample protection against fire. Particular attention has been given to the installation of a complete sewerage plant, the main sewer being 6 feet in diameter, built of brick and empties into the Shenango River.

The Tube Mill.

About two months ago the Sharon Steel Company decided that with their ample facilities for making steel at low cost, together with plenty of ground available for the purpose, and with a constant supply of their own steel assured, it would be advantageous to engage in the manufacture of tubular goods. Plans were at once drawn and the company have already started to work on the building of a very large and complete tube plant, which will be located alongside the rod mill. The skelp mill will be able to handle ingots up to 20 inches thick, 40 inches wide and in 5-foot lengths. These blooms will be charged in the reheating furnace in the skelp mill by a Wellman-Seaver charging machine, operated by an overhead traveling crane. From the reheating furnace a traveling charging crane lays the piece on a conveyor, which takes it to a 26-inch Mackintosh, Hemphill universal mill. This mill is driven by a reversing engine of the Mackintosh, Hemphill type. The piece is rolled down to the required size and passes then into three bull head stands, each being directly driven by 46 x 60 Corliss engine, built by Robert Wetherill & Co. Between each bull head is a power driven conveyor table, which conveys the piece from one bull head to another. After leaving the last bull head the piece is conveyed to a cooling table, then to a shear table, where it is cut in proper sizes and collected in cradles and taken up by cranes to the stock department, which transfers the loaded cradles to the front of the bending furnaces. From the bending furnaces the piece goes to the welding furnaces, then to the welding rolls, finally to the cooling tables, after which the pieces are cut and threaded. Part of the product will be galvanized, the concern being equipped to furnish either galvanized or black pipe. The tube mill is equipped with two double lap welding furnaces and two butt welding furnaces. It has a galvanizing department and a socket department. The machinery is partly driven by electric motors and partly by steam. After the tubes are finished they enter the shipping department and are loaded into cars. The reheating furnace building in connection with the tube mill is 65 feet wide by 493 feet long, and is commanded by two 10-ton charging cranes. The skelp mill building is 280 x 50 feet in size. The universal mill building is 70 x 120 feet and is commanded by a 50-ton crane, the mill being driven by a 55 x 60 inch reversing engine. The building containing the three bull heads is 60 x 280 feet, while the building above the cooling beds is 180 x 130 feet. The stock department of the pipe mill proper is 270 feet long by 325 wide, and the shipping department is 70 feet wide and 475 feet long. There will be a 20-ton crane above the three bull heads. The rolls in the universal mill are 88 inches long.

Output of the Works.

The magnitude of the entire plant of the Sharon Steel Company insures a very large product, both in raw and finished materials. The blast furnace is expected to turn out 500 to 600 tons of metal per day, the basic open hearth plant 800 to 1000 tons, the blooming mill 800 tons, the billet mill 600 tons, the tin bar mill 500 tons and the two rod mills 400 tons each every 24 hours. The wire mill is expected to turn out 400 tons of wire per day, more than half of this being consumed in the wire nail mill, which is now equipped with 250 machines of German pattern, and will turn out about 4000 kegs of wire nails per day.

The whole plant of the Sharon Steel Company, from the blast furnace to the finishing mills, is thoroughly modern and equipped with the very best machinery that money could buy. The projectors of the plant had constantly in view the building of mills that could be most economically operated, and at the same time turn out a maximum of output. There is probably not a concern in the country to-day better equipped for manufacturing at a low cost than the Sharon Steel Company. The railroad facilities for receiving and shipping materials are admirable, the works having direct connection by switches with several trunk lines, among these being Erie & Pittsburgh system of Pennsylvania lines west and also the Erie Railroad. As will be seen by reference to the ground plan, an ample number of switches have been made to insure easy handling of materials, either inbound or outbound. The credit for the building of such a complete plant belongs to R. Schneider, the chief engineer; to Nevin McConnell, the general superintendent, and to John Stevenson, Jr., the general manager and vice-president of the company. It is fully expected that every department of the works, with the exception of the new tube mill, will be in full operation not later than July 15 or August 1 next.

Sharon Tin Plate Company.

As noted above, the Sharon Tin Plate Company are a constituent interest of the Sharon Steel Company, and were organized a short time after active work was started on the Sharon Steel Company plant. The original tin mill was designed to contain ten mills, and before these were finished the entire product of tin andterne plate was sold to the American Tin Plate Company for a term of five years, the price to be the regular market price of tin plate. This is probably the first case in the manufacturing business where the concern have been able to sell their prospective entire output at a very high price and for a period of years. This contract was made in order that the output of the Sharon Tin Plate Company would not come in competition with the American Tin Plate Company. A short time before this contract was made with the American Tin Plate Company the Sharon Tin Plate Company decided to double their plant by the building of ten more mills, and these are actively under way and will probably be ready for operation in the latter part of the year. The hot mill building is 900 feet long by 108 feet wide and is equipped with two 20-ton electric cranes. All doubling and squaring shears are run by electric power. This building contains ten 26-inch hot tin mills, which are completed and running, and ten more building. Of these mills one has rolls 34 inches wide, one 36 inches wide, eight 32 inches wide, while the ten that are building will be 30 inches wide. The furnaces completed are 12 sheet furnaces and ten pair furnaces. There are also ten additional sheet and ten additional pair furnaces in course of erection. These furnaces are all fired with producer gas. Power for the first ten mills is furnished by a Buckeye compound condensing engine, furnished by the Buckeye Engine Company, Salem, Ohio. Power for the second ten mills will be furnished by a compound condensing engine, furnished by Mackintosh, Hemphill & Co. of Pittsburgh. The steam for these mills will be furnished by five 400 horse-power Wheeler boilers in boiler house No. 1, and three of the same type in boiler house No. 2, all furnished by the Wheeler Boiler Company of Sharon, Pa.

The cold mill is 520 feet long by 88 feet wide and is

equipped with five annealing furnaces, and one building of 50 tons capacity for 12 hours. These furnaces will be equipped with Swindell chargers and one 20-ton crane. There are 13 stands of cold rolls, 12 driven tandem and one for one-pass 24-inch rolls.

The black pickling room is 72 x 90 feet in size, and is equipped with two Mesta pickling machines, furnished by the Mesta Machine Company of Pittsburgh. The

tire tin mill from beginning to end has modern equipment throughout, and the process of making tin and terne plate is continuous, there being no rehandling of material whatever.

Combination Boiler Coupling.—The Western Tube Company of Kewanee, Ill., are placing on the market the Kewanee combination boiler coupling. This is a

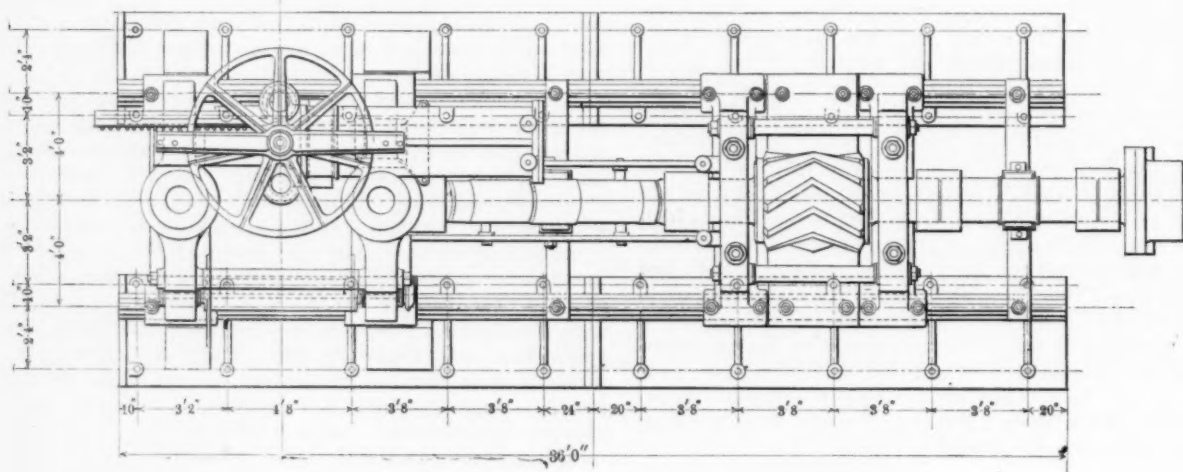


Fig. 11.—Plan of 38-Inch Lloyd Booth Blooming Mill.

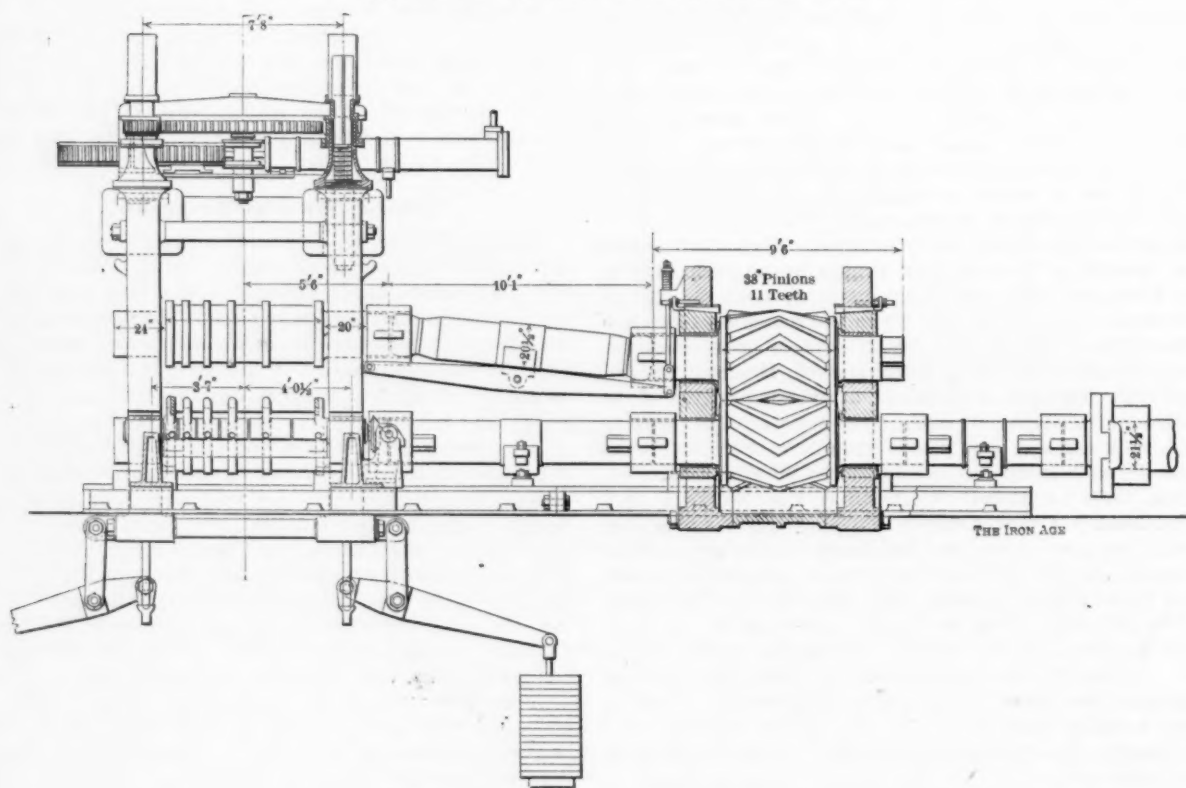


Fig. 12.—Elevation of 38-Inch Lloyd Booth Blooming Mill.

THE SHARON STEEL COMPANY, SHARON, PA.

white pickling room is 72 x 128 feet and is equipped with one Mesta machine. The tin house is 72 x 212 feet and is equipped with 24 sets of doubling machines. The assorting room is 72 x 128 feet. Warehouse No. 1 is 160 x 72 feet. Warehouse No. 2 is 160 x 72 feet. Machine shop 60 x 60 feet and blacksmith shop 40 x 60 feet. There is a power house 80 x 40 feet equipped with two 250 horse-power Buckeye cross compound engines, direct connected to two Westinghouse generators of 200 kw. each.

The tin bars used in the mill are brought over by track from the tin bar mill of Sharon Steel Company and are taken direct to the reheating furnaces. The en-

brass and iron ground ball joint coupling for iron pipe. It is made both straight and bent. The special feature about the coupling is the whipple, which is made of brass, the other portion being iron. The coupling has all the advantage of a connection requiring no gasket to make a tight seal; also a screw joint of different metals, being thereby non-corrosive.

The American Metal Company, Limited, of New York, have filed with the Secretary of State of New York a certificate of an increase of the capital stock of the company from \$1,000,000 to \$1,500,000.

Reciprocity Treaties and Tariff Revision.

WASHINGTON, D. C., July 2, 1901. —A sharp alignment is rapidly being brought about of prominent Senators and Representatives on the double issues as to whether the pending reciprocity treaties are to be ratified, and whether any revision of the tariff is to be undertaken during the coming Congress. With reference to the reciprocity treaties the question is taking shape in the Senate through the rival candidacy of Senators Lodge and Cullom for the chairmanship of the Senate Committee on Foreign Relations. It was semi-officially announced some time ago that the Senatorial Steering Committee had selected Senator Lodge for this position, but the New England Senator's outspoken opposition to the reciprocity treaties, of which his committee has full charge, makes him *persona non grata* to the administration for this service, and the majority Senators advocating reciprocity have united on Senator Cullom, whose record has been consistently favorable to this class of trade agreements, and if Senator Lodge is finally chosen by the Republican caucus it will not be unanimously.

Great interest has been aroused here by the unqualified declaration of the recent Ohio Republican Convention in favor of reciprocity, and it is authoritatively stated that this plank of the platform was submitted to the President and approved by him before it was offered for

along the lines of mutual interest between this country and another. The French reciprocity treaty would have been accepted had it not been for some objectionable tariff features. The treaties as they stood if ratified by the United States, would have killed the knit goods industry in the New England States and the pottery business in Ohio. That is the reason they failed. As long as the United States is able to make reciprocity treaties with foreign countries without injury to American industries they will be made, and gladly."

One of the most influential friends of reciprocity in the Senate is Senator Platt of Connecticut, who is a leading member of the Finance Committee. Senator Platt contends that it is impossible to negotiate reciprocity treaties strictly on the basis that neither party to the convention shall make concessions on any article of its own produce. The industries of the leading countries are so thoroughly diversified that it is the Senator's opinion that it would be impossible to draft a treaty worth the trouble to which no exceptions would be taken by any American interest, no matter how small. In a recent article on the subject of reciprocity Senator Platt expresses the opinion that reciprocity through treaties is certain to become an accomplished fact.

A great deal of anti-reciprocity literature is being sent out by the American Protective Tariff League and other protectionist organizations, including the text of a series of lectures delivered before the University of California by John P. Young of San Francisco, who denounces tariffs made by special trade treaties as "unconstitutional, unfair and dangerous." Nearly all the Republican members of the Ways and Means Committee, acting either upon an intimation received from some quarter, or upon a common impulse, have recently given out statements, some of which have been quoted in these columns, predicting that there will be no general tariff legislation during the coming Congress. Some of these statements have gone so far as to declare that the pending reciprocity treaties will be rejected. Representative Steele of Indiana, who is a conservative member of the committee, during a visit to Washington within the past week, said:

"There is no pressing demand throughout the country for tariff revision. Certainly there is no such demand in Indiana, where even the Democrats are satisfied with the present condition of affairs. When tariff revision is necessary, which is not now apparent, it will be undertaken along Republican lines. The business people of the country do not want tariff legislation. If they want anything it is a rest. They are doing first rate and they do not want their prosperity jeopardized by tariff tinkering."

Representative Grosvenor of Ohio, one of the most active members of the Ways and Means Committee, in discussing the Babcock bill and general tariff legislation, says:

"I do not believe that the placing of our products of iron and steel upon the free list would break up a single trust or impair the value of a stock of the United States Steel Corporation or any other of the combinations. I do believe that it would wipe out the small manufacturers and that the great combination would control absolutely the markets of the United States in company with and upon a basis of division of profits with the trusts now organized abroad. I do not care to discuss this subject now. I believe the whole matter to be an inspiration of the devil of free trade, and it has been seized upon because of the supposed anxiety of the people to break down trusts and combinations; but my point is that a present agitation of a serious character backed by force enough to make it effective of a general revision of the tariff laws would be absolutely destructive of the present prosperity. There is no trouble about the trusts. Under our Constitution as at present formed, Congress, in co-operation with the State Legislature, has ample power to do all that is necessary, all that is just, all that is fair, in the regulation of combinations of money, capital and labor."

The principal advocates of the ratification of the pending reciprocity treaties are urging the importance of creating foreign markets for our surplus products, and

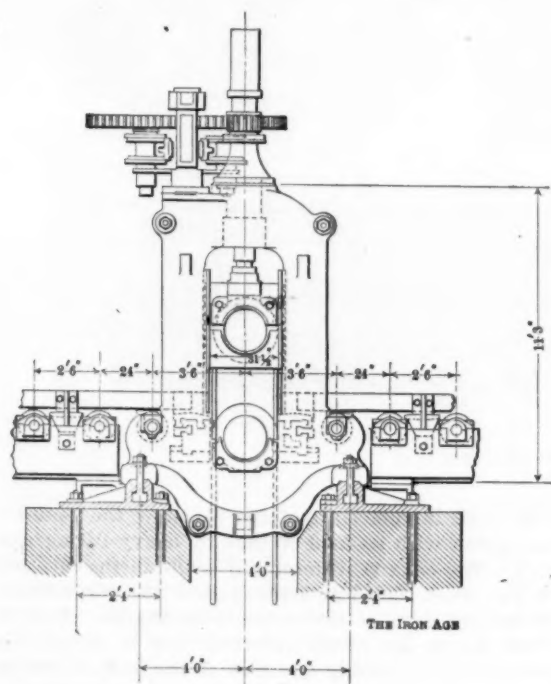


Fig. 13.—Side Elevation Lloyd Booth 38-Inch Blooming Mill.

THE SHARON STEEL COMPANY, SHARON, PA.

adoption. It is an important fact, but one which is quite generally misconstrued, that Senator Hanna, although in line with the administration on nearly all public questions, is opposed to the pending commercial treaties. The Ohio Senator did not hesitate to take issue with the reciprocity plank in the platform of the Ohio convention, and in an authorized interview in which he discussed Congressman Babcock's free metal bill he said:

"This talk that the next Congress will tinker with the Dingley tariff law at the suggestion of the President is all nonsense. The Dingley law is a scientific measure and will last for years to come. The President believes it is as necessary as before, and will not, in my belief, advocate any changes whatever. He still believes in protecting the American industries wherever it is necessary. The President, however, is a strong advocate of reciprocity, and would, I think, consider treaties

they emphasize strongly that, in spite of the growth of our exports, trade with those countries with whom reciprocity treaties are now pending is falling off. For example, our total exports to France for the 11 months ending May 31, 1901, amounted to but \$75,852,000, as against \$78,453,000 for the corresponding period a year ago. Our trade with the Argentine has also decreased during the past year, and there has been an important reduction in the amount of our exports to the British

vention of Julian Kennedy, the well-known mechanical engineer, of Pittsburgh. The experiment is being made secretly, and the construction of the oven is being guarded from the public until it is definitely known whether it will be a success. It is claimed that the new method of coke making does away with the manual labor of coke drawing, and produces less smoke. An interior basket is supplied to the ordinary beehive oven, and into this receptacle the charge is dumped. The

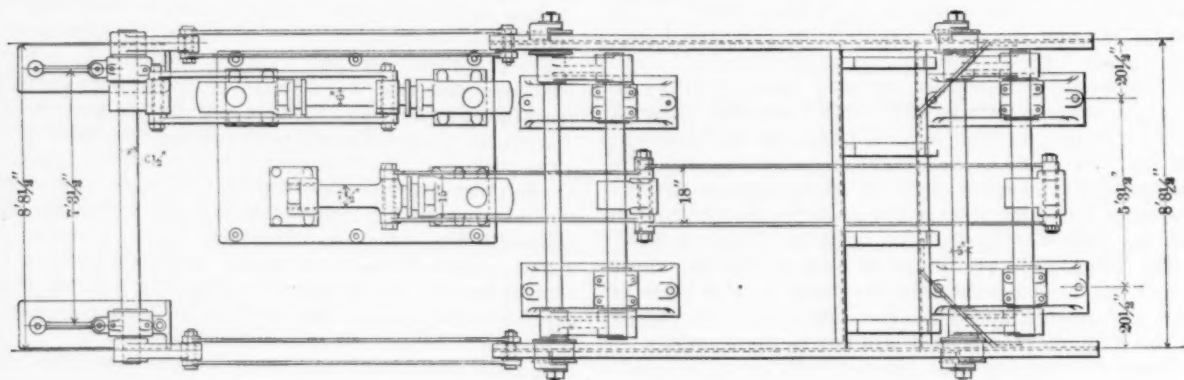


Fig. 14.—Plan of Manipulator.

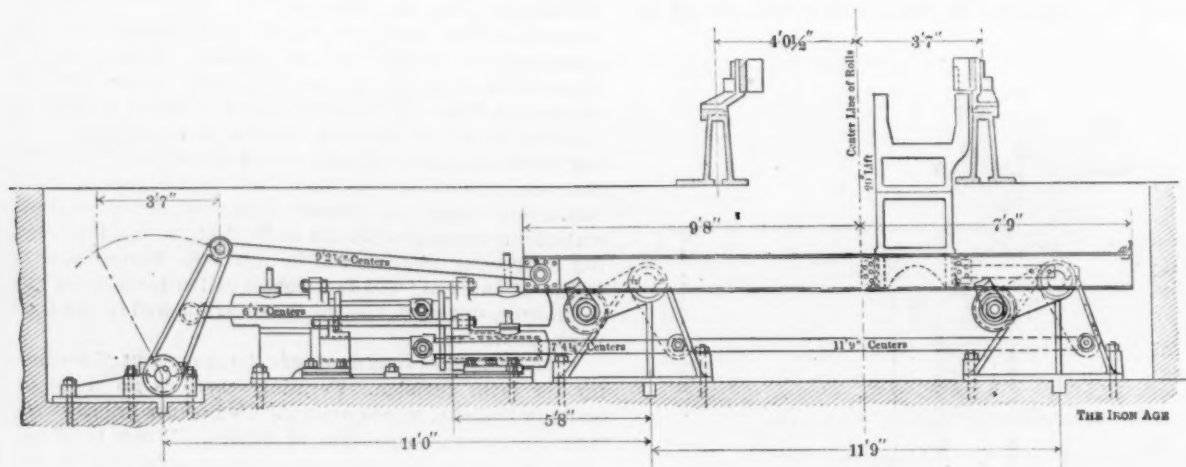


Fig. 15.—Elevation of Manipulator.

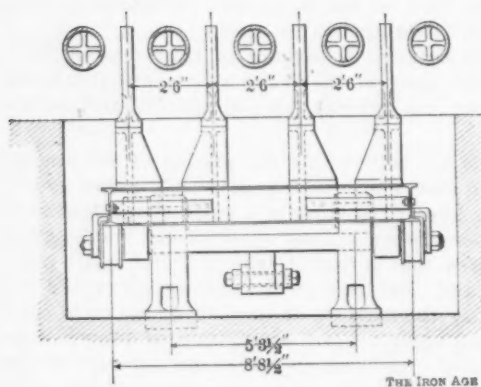


Fig. 16.—End Elevation of Manipulator.

THE SHARON STEEL COMPANY, SHARON, PA.

West Indies, which are covered by pending treaties. From all these countries, however, our imports continue to increase, and it is urged that this condition will not change until we can secure concessions that will give us advantages in these markets which we do not now possess.

W. L. C.

A New Design of Coke Oven.—The H. C. Frick Coke Company are making an experiment at the Central Coke plant with a new design of coke oven, which is the in-

trunnel head is sufficiently large to allow the removal of the basket with its load of coke by heavy lifting machinery. The coke is watered out while in the air, and is swung, when cooled sufficiently, into the car without the least breakage of the entire oven charge. Two of the new ovens are being operated, and it is said by experts that the burning qualities of the new ovens are equal to those of the standard beehive oven.

A Mysterious Cupola Explosion.—A mysterious explosion occurred in a cupola in the old Wells & French Car & Foundry Company, on Blue Island avenue, Chicago, June 26. Two men were instantly killed and five others so seriously injured that some of them may die. The cupola was almost ready to be tapped, when the lower part of it was blown to pieces with a loud report, scattering portions of the cupola, fire brick and molten iron through the foundry. The explosion cannot be accounted for on the theory of accumulated gases, and it is supposed that some high explosive was charged into the cupola with the scrap or coke.

Swedish Exports of Iron Ore.—The iron ore exports from Sweden reached 1,619,901 tons in 1900, as compared with 1,688,000 tons in 1899, 1,439,860 tons in 1898 and 1,400,801 tons in 1897. The port of Lulea shipped 1,054,875 tons and Nikoping 531,908 tons. The destination is shown by the following figures: Finland, 18,731 tons; Germany, 422,625 tons; Holland (also for Germany), 967,249 tons; England, 102,771 tons; Belgium, 99,125 tons, and France, 9400 tons.

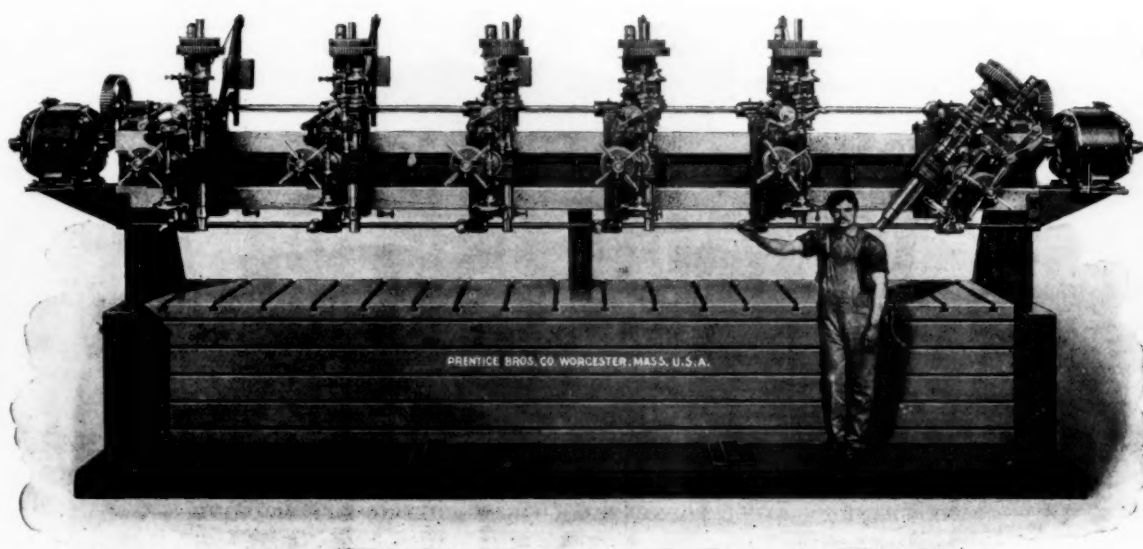
The Prentice Gang Drill for Locomotive Work.

The new gang drill built by the Prentice Bros. Company of Worcester, Mass., is intended especially for drilling simultaneously all the holes in a locomotive frame, some of which are drilled vertically and some at an angle. The table is in three sections, each provided with independent in and out adjustment. The work can either be screwed to the flat top or to the front surface of the tables, both of which are formed with T slots. The heads have a transverse movement on the arms, and the latter have a lateral movement on the cross rail. One head has angular adjustment. The spindles are counter-balanced with an independent vertical adjustment. They are driven by gearing from the top shaft and controlled by clutches, the handles of which are within easy reach of the operator. The spindles have hand and power feed, quick approach and return movement and an automatic stop motion. They are independently rotated, or fed, started or stopped. Eight changes of speed and three changes of feed are provided. The base plate has a deep oil gutter around the top. The machine is driven by two $7\frac{1}{2}$ horse-power motors.

The maximum distance from the spindles to the table

The United Engineering and Foundry Company.

In *The Iron Age* of June 20 it was stated that a movement was on foot to consolidate the interests of the Lincoln Foundry Company and the Frank-Kneeland Machine Company, both of Pittsburgh, and the Lloyd Booth Company of Youngstown, Ohio. This was the first publication made of this proposed consolidation. At a meeting of the stockholders of these three concerns, and also those of McGill & Co. of Pittsburgh, builders of rolling mill machinery, the formal consolidation of these four concerns was effected into one company, to be known as the United Engineering & Foundry Company. The new company are capitalized at \$5,500,000, of which \$2,500,000 is 7 per cent. cumulative preferred stock and the other \$3,000,000 is common stock. All of this stock has been subscribed for by the members of the four concerns directly interested, the public not being allowed to participate in the stock distribution. The organization of the United Engineering & Foundry Company was followed by the election of officers and directors. These are as follows: Isaac W.



THE PRENTICE GANG DRILL FOR LOCOMOTIVE WORK.

is $28\frac{1}{2}$ inches; minimum distance $16\frac{1}{2}$ inches. The maximum distance between the outside spindles is 16 feet 5 inches. The minimum distance between the spindles is 12 inches. The transverse adjustment of the heads or arms is $8\frac{1}{2}$ inches, and on the swivel arm $5\frac{1}{4}$ inches. The distance between the housings is 19 feet. The machine occupies a floor space of 21 feet 10 inches by 7 feet 4 inches, is 12 feet 2 inches in height and weighs 46,000 pounds.

The Central Iron & Steel Company.—James B. Bailey has been elected general manager and treasurer of the Central Iron & Steel Company of Harrisburg, Pa., to succeed the late Gilbert M. McCauley. A special meeting of the stockholders has been called to vote upon a proposition to increase the capital stock of the company from \$1,000,000 to \$5,000,000. No announcement has been made as to the purpose of the increase, but it is understood that it will be utilized in further important enlargement of the plant. This company have been crowded with orders.

The plant of the Deutsche Garvin Maschinen Fabrik A. G., at Berlin, has closed down. It appears that the works were not actually completed, and the dismissal of the men does not mean a failure. Probably work will be resumed on a moderate scale, in view of the unfavorable business situation. During the first fiscal year the company lost 237,699 marks.

Frank, president; Charles H. Booth of the Lloyd Booth Company, first vice-president; Fred. A. Campbell of McGill & Co., second vice-president; Edward Kneeland of the Frank-Kneeland Machine Company, treasurer, and Charles E. Satler of McGill & Co., secretary. The Board of Directors consist of Isaac W. Frank, Otis H. Childs, Thomas J. Bray, Jr., Lloyd Booth, Edward Kneeland, Charles H. Booth, Fred. A. Campbell, J. J. Donnell, James H. Lockhart, Richard Garlick, W. L. Abbott and Charles E. Satler. The downtown offices of the company will be in rooms 404, 405, 406, Bank of Commerce Building, Pittsburgh. The general offices will be at the works of the Frank-Kneeland Machine Company, Fifty-fourth street and A. V. Railway, Pittsburgh.

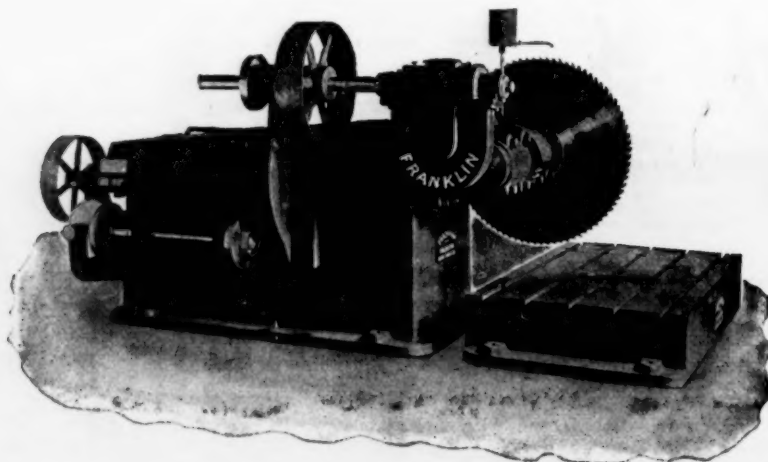
The United Engineering & Foundry Company start out under the most favorable auspices, all the works taken over having been large money makers in the past, while the capitalization is regarded as conservative, and the company do not expect to have any trouble in earning dividends, and also in accumulating a surplus. The company have ample capital to carry on their business and to make any additions to existing works that may be desired. The officials of the company are practical men, and have been very successful in directing the affairs of the constituent companies. Large economies can be effected in operation of the plants by the consolidation, and it is intended that each of the constituent works shall run on products for the making

of which it is best adapted. The Lincoln Foundry Company, who have given their attention entirely to the making of rolls since they were organized, and who have one of the best roll foundries in the country, will no doubt continue to make rolls exclusively. The Frank-Kneeland Machine Company, who build rolls and heavy rolling mill machinery of all kinds, will probably give up making rolls, and build only heavy rolling mill machinery in the future. The Lloyd Booth Company will likely continue to build rolls and rolling mill machinery as in the past, this concern having very complete foundry and extensive machine shops; the latter equipped with modern iron working tools. This firm have built some of the largest equipment for steel works and other plants. The works of McGill & Co., in Pittsburgh, will likely run on rolling mill machinery, for the building of which this concern are well equipped. It is not intended that the identity of the four concerns will be eliminated, but on the contrary it will be kept up. The Lloyd Booth Company will be known as the Lloyd Booth Works, the Frank-Kneeland Machine Company as the Frank-Kneeland Works; the Lincoln Foundry Company as the Lincoln Works, and McGill & Co. as the McGill Works. We may state that negotiations are in progress

San Francisco built 64 miles on the extension down through Indian Territory and into Texas. The Southern Pacific completed 60 miles, mostly in Texas. The Blackwell, Enid & Southwestern and the Great Northern each built 56 miles, the Denver & Rio Grande 47 miles, the Choctaw Northern 40 miles, and the Northern Pacific 39 miles. As a rule the building has been either by the older companies or by new companies closely affiliated with the older organizations.

The Franklin Foundry Cold Saw Cutting Off Machine.

The steel foundry cold saw cutting off machine recently placed on the market by the Franklin Machine Works, Incorporated, of Philadelphia was designed by Wm. H. Lucas, the superintendent of the works. It is intended to be used for cutting off heads, &c., from large steel castings. The machine is made in two parts, the work table being entirely separate from the machine itself, and of standard size, 72 x 42 inches, but can be furnished in any special sizes desired. The work to be machined is clamped on the table in the usual manner.



THE FRANKLIN STEEL FOUNDRY COLD SAW CUTTING OFF MACHINE.

with two other concerns building rolls and rolling mill machinery, and these may be taken over within a short time.

New Railroad Building for Six Months of 1901.

Nearly 2000 miles of railroad was built in the United States during the first six months of this year, according to returns so far received by the *Railroad Gazette*. Much of the mileage included is obtained directly from official sources; the rest is estimated according to facts obtained from various sources. Later returns will undoubtedly add somewhat to the total. The figures by States show a total of 1967½ miles completed during the six months and by 154 different companies. This is a somewhat smaller aggregate than is shown by the latest revised returns for the corresponding six months of 1900, which are placed at 2110½. The indications are that the new mileage of the full year will not be quite as large as that of last year.

Texas leads the States for the first six months of this year with 245 miles, and Oklahoma is a close second with 243 miles. The returns show that Georgia built 144 miles, Arkansas 133 miles, Louisiana 103 and Colorado 102 miles. Seven other States built more than 50 miles each. As in recent years, the South continues to show the largest activity in railroad building.

Among the individual companies the Chicago, Rock Island & Pacific leads with no less than 157 miles to its credit. Most of this was on the extension from the Kansas State line across Oklahoma and Texas and toward the proposed junction with the El Paso & North-eastern at Santa Rosa, New Mexico. The St. Louis &

and the ram carrying the saw feeds outward while at work cutting off the heads, &c. The saw blade is 40 inches in diameter and will cut off round heads up to 13 inches in diameter, and is so arranged as to allow the heads to be cut off flush with the sides of the casting being machined.

The ram has a variable automatic feed, ranging from 1-16 inch to 2 inches per minute, with automatic stop and quick movement by power in either direction, through separate countershafts. Each machine is furnished with proper saw to suit the different classes of work to be done. This tool is simple in design and construction, having at the same time great strength and wearing power, and weighs complete about 13,000 pounds.

The Census Bureau has issued a bulletin giving the statistics of manufactures for the State of Delaware. The bulletin places the total gross value of manufactured products for the State at \$45,387,630, an increase of 20.8 per cent. over the value of such products for 1890. The number of establishments in 1900 was 1417; the capital invested, \$41,203,239; average number of wage earners, 22,203; total wages paid, \$9,263,661; cost of material used, \$26,652,601. The net or true value of products is given at \$29,513,449, the value of materials purchased in a partly manufactured form being \$15,864,041.

Oil fields are being developed in the vicinity of Chanute, Kan. We are advised that seven wells on one farm paid a net income of \$400 per well for May in royalties on oil leases.

The Tropenas Steel Oil Cup.

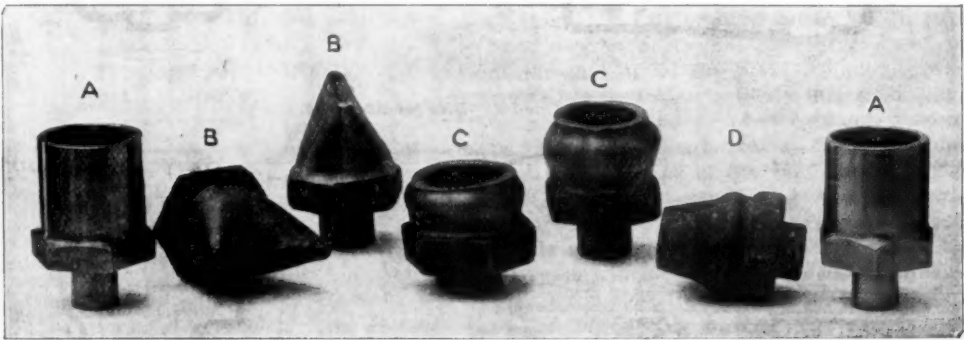
The Sargent Company, 675 Old Colony Building, Chicago, are meeting with much success in the production of special steel for the manufacture of small castings in the Tropenas steel converters at their works at Chicago Heights, Ill. An illustration reproduced from a photograph is given herewith which shows quite conclusively the quality and toughness of the metal. In this illustration, the letter A represents finished oil cups, B the cups with the walls pressed together in a vise, C the cups subjected to longitudinal pressure, D a cup with the walls bent in. In no case of punishment did the steel show fracture. These oil cups can be supplied in large or small quantities of any size desired. The demand for articles of this and a similar character has made it necessary for the company to add considerably to their Tropenas department.

The Colorado Fuel & Iron Company.

In the statement prepared for the New York Stock Exchange to accompany the application for listing \$6,000,000 additional capital stock and \$2,303,000 5 per cent. bonds, it is announced that a contract has been entered into for the sale of the remaining \$6,000,000 of common stock in consideration of \$3,480,000 in cash and 24,989 shares of the capital stock of the Rocky Mountain Coal & Iron Company, par value \$2,498,900. The property secured by the stock of the Rocky Moun-

owned and controlled by the Colorado Fuel & Iron Company:

Real Estate.	
Coal lands owned, acres.....	253,326
Coal lands leased, acres.....	22,058
	275,384
Iron lands owned, acres.....	1,459
Iron lands leased, acres.....	1,466
	2,925
Iron and steel plant, water supply reservoirs, limestone quarries, &c., acres.....	3,468
Agricultural, grazing and timber lands, acres.....	165,085
Total, acres.....	446,862
Town lots, Pueblo, Walsenburg, Crested Butte and Sopris, acres.....	2,500
Fuel Department.	
24 coal mines in operation, daily capacity, tons.....	20,000
1,282 coke ovens in operation, daily capacity, tons 2,300	
900 coke ovens under construction, daily capacity, tons.....	1,500
	3,800
2,182	
Iron Department.	
3 iron mines in operation, capacity, tons per day.....	3,000
Limestone quarry, capacity, tons per day.....	2,000
Iron and Steel Plant, Near Pueblo, Col.	
2 blast furnaces in operation, capacity, tons per day....	450
3 blast furnaces under construction, capacity, tons per day.....	1,200
5.....	1,850
Bessemer converter, capacity, tons per day.....	2,000
1 blooming mill, capacity, tons per day.....	2,000
1 blooming mill under construction, capacity, tons per day.....	2,000
10 basic open hearth steel furnaces under construction, capacity, tons per day.....	1,000



THE TROPENAS STEEL OIL CUP.

tain Coal & Iron Company consists of 259,000 acres of land in Las Animas County, Colorado, adjoining the most important coal properties already owned. This land is subject to a mortgage securing \$750,000 5 per cent. 50-year gold bonds, issued by the Rocky Mountain Coal & Iron Company, maturing May 1, 1951, which have been guaranteed by the Colorado Fuel & Iron Company.

The cash consideration received for this stock will enable the company to complete the improvements projected at the time the increase in the stock was authorized by the stockholders, which improvements will result in increasing the output of the steel plant of the company from 150,000 tons annually of finished product to 550,000 tons, and the acquisition of the necessary additional coal and iron lands, opening of mines, building of coke ovens, washeries and other plants.

It was stated in a circular issued to the stockholders at the time they were asked to vote the increased capital stock, that it would require at least two years to make the proposed improvements. All of the improvements are well under way toward completion, and the company will have in a short time an annual capacity of 550,000 tons of finished steel products, and will be able to produce from their properties the material and supplies required therefor.

The first of the new blast furnaces, which will double the output of pig iron, is rapidly approaching completion, and is expected to go into blast in from 30 to 60 days. The contract date for its completion was April 1, but unavoidable delays have occurred.

The following is a brief description of the properties

Rail mill, capacity, tons per day.....	2,000
Merchant mills, capacity, tons per day.....	200
Pipe foundry, capacity, tons per day.....	40
Bolt and spike mills, castings foundry, machine shop, roll shop, electric plant, water works, &c.	

Auxiliary Plants in Course of Construction.

Merchant, tin plate and bar mill, capacity, tons per day.....	400
Cotton tie hoop and merchant mill, capacity, tons per day.....	150
Rod mill, wire and nail plants, capacity, tons per day....	600
Tin plate mill, capacity, tons per day.....	200
Sheet mills, capacity, tons per day.....	150
Plate mill, capacity, tons per day.....	300

Total, tons per day..... 1,800

The capacities of the Bessemer converter and rail mills are given as they will be when improvements now under way are completed.

The company lease and operate a rolling mill plant at Laramie, Wyo., capacity 100 tons per day.

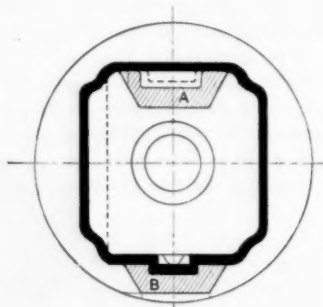
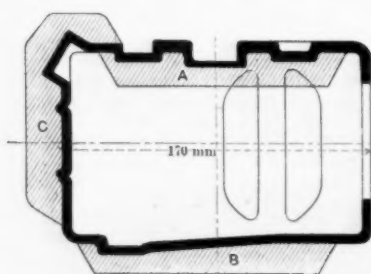
Irwin Belford, appointed referee in an action brought by the Pittsburgh Reduction Company against the Cowles Electric Smelting & Aluminum Company in the year 1892, has just made a report of his findings, which are in favor of the Pittsburgh Reduction Company. The Cowles Company, it is alleged, used the Hall patent for the manufacture of aluminum, thereby infringing on the rights of the Pittsburgh Reduction Company, the owners of the Hall patent. A claim for damages has been allowed to the Pittsburgh Reduction Company by the referee to the extent of over \$500,000. The Cowles Company also have a suit pending against the Pittsburgh Reduction Company for an alleged infringement of the Cowles patent.

The Huber System of Shaping Metal Goods by Hydraulic Pressure.

There has been brought out in Germany a new system of shaping metal articles which has received the indorsement of so high an authority as Prof. A. Riedler of Berlin, well known in this country in connection with the pumps which bear his name. The system is the invention of a Karlsruhe engineer, Huber, and is intended particularly for shaping metal articles, both useful and ornamental. It has been found particularly advantageous in the manufacture of hollow articles which cannot very well be made conveniently by other methods. It is done without blow or shock by quiet, uniform pressure. It depends upon placing the articles to be formed directly into the cylinder of an hydraulic press so that the material is forced into the mold or die. Since in the case of most metals, like iron, steel, &c., the limit of elasticity is below or little above 55,000 to 60,000 pounds

It is evident that such a system has great practical importance; that it is possible to produce articles of utility or of art in a simple manner. A series of samples produced at the works of the Deutsche Waffen und Munitionen Fabrik, at Karlsruhe, showed how readily shapes may be produced which it was formerly only possible to make by hand or which could not be made at all. The pressure cylinder is simply a vessel filled with water; then the articles to be shaped are placed into it, and by hydraulic power a piston is forced into this vessel until a pressure of 4000 to 8000 atmospheres has been developed. The shaping begins with the bending of the material into the mold, and is completed when the limit of flow of the metal has been passed.

The molds or dies are simple plates, cylinders, &c., with depressions and raised parts which are to be reproduced in the article to be worked. A very important point is that the molds or dies need not be hardened, since they are subjected only to pressure, which does not produce abrasion and rapid wear. Instead of being made of



Figs. 1 and 2.—Dies for Axle Box.

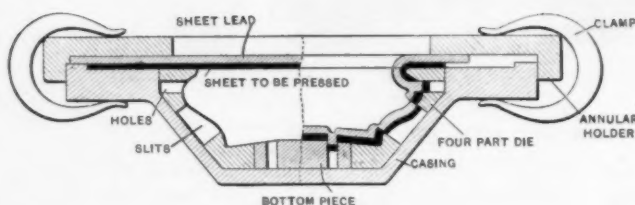


Fig. 3.—Die for Embossed and Perforated Article.

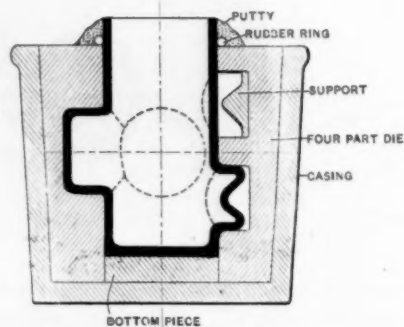


Fig. 4.—Die for Bicycle Hub.

THE HUBER HYDRAULIC SHAPING SYSTEM.

per square inch, water pressure of 100,000 pounds, or 5000 atmospheres, within the cylinder of the press leads to the flow, cold, of most metals and brings about the change of form desired. In this system there is no blow of metal upon metal; water alone is the active medium which operates not in one direction alone but from all sides equally upon the piece to be worked. This water pressure, which acts upon a hollow body from without and from within, is thus counterbalanced, and is only operative upon the work to be shaped when the mold or die is placed closely upon it; then the material is forced into the depressions in the mold.

The ordinary pressure piston is therefore absent, and the effect upon the piece to be worked is obtained by water under high pressure operating in all directions. The pressure cylinder really becomes nothing else but the vessel for containing the article to be shaped, and in such closed vessels the most varied changes in the shape of articles may be brought about without blow or shock. It is applicable particularly to hollow articles, and to the decoration of the surfaces of all articles, provided that the pressure be high enough to cause the flow of the metal, and that the molds or dies possess greater resistance than the material to be shaped, the latter being closely packed to the mold.

steel or other material the molds or dies may be of glass, porcelain and of copper or nickel, electrotype, cast bronze, &c. Of course it is understood that the article to be shaped must be made to adhere absolutely water tight to the die or mold. The material can only be made to flow into the desired shape when the interstices between the mold and the metal are not under water pressure. The packing must be absolutely reliable and automatic. This can be secured by many simple appliances: thus a rubber ring, a rubber strip, or in the case of hollow articles a rubber bag, may be drawn over the joint, the rubber being forced into position more and more as the pressure rises. Experience has shown that ordinary putty may be relied upon as a satisfactory packing. The metal to be shaped need not at the outstart have the correct shape. That is attained by the hydraulic pressure. So far as the reproduction of artistic designs in metal are concerned the dies may be produced by electrotype, so that the artist's model may be employed directly.

There are many occasions when hollow articles of iron or other metals of special shape are to be produced on a large scale of exactly the same dimensions. This can be very readily done by the Huber method. The accompanying engravings, Figs. 1 and 2, show the range for

the production of an axle box. The molds or dies A, B, C, may be employed separately or the whole of them may be arranged in one common casing. Punching of similar parts may be carried on simultaneously with the shaping of the article. Fig. 3 may be referred to as an

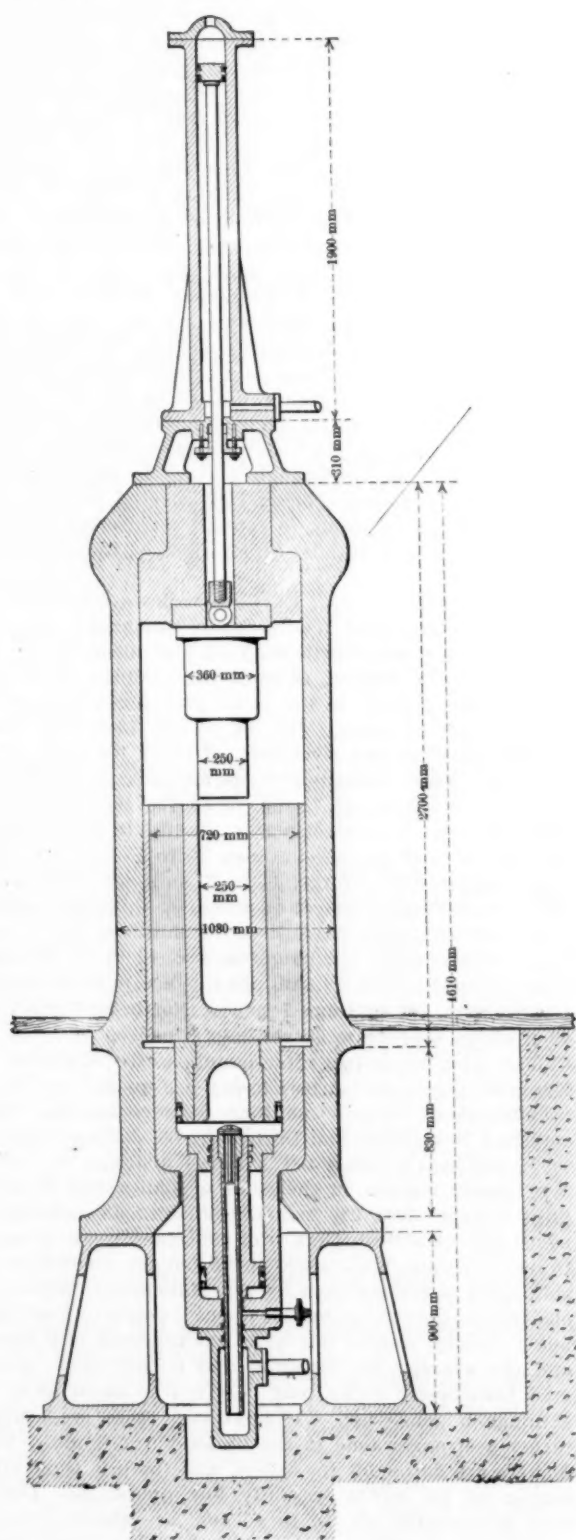


Fig. 5.—Hydraulic Press.

THE HUBER HYDRAULIC SHAPING SYSTEM.

instance. In a general casing there are several dies arranged with the necessary openings. The left half of the illustration shows the die casing, while on the right is shown the sheet after having been subjected to hydraulic pressure. This sheet is to be dished, ornamented and punched at one operation. For this purpose sheet lead and annular holder are attached, the function of

which is to prevent the formation of folds and provide against the entrance of water. Of course, only such operations may be carried through by one subjection to hydraulic pressure which do not demand too great a stress upon the material. After the sheet has been dished under the hydraulic pressure it is forced more and more under the growing pressure against the walls of the die or mold, flows into the decorative depressions and at those points where there is no counter pressure the material is punched. The whole operation is carried through in a few seconds.

Very great changes in form call for a series of operations, between which the material must be annealed. In such a series only one die need be employed when the depressions representing the later operations are filled with a material easily removed.

Thus in the bicycle industry a number of parts may be shaped which formerly were welded or brazed. Fig. 4 represents the gradual production of a bicycle hub. A conical plate referred to in the drawing is put into the die at the first operation, and then after annealing the pressure is continued.

Articles may also be pressed when hot. In this case hot sand must be used instead of water, the sand transmitting the pressure fairly uniformly in all directions. A good substitute for hot sand is also a mixture of sand and an iron-zinc alloy, which at a red heat has a consistency like talcum, is easily molded and holds heat longer than does the sand. After the shaping by pressure has been carried through the mass may be readily removed by melting. However, this may be done also when cold, because the mass crumbles after it has been allowed to cool.

Professor Riedler goes somewhat in detail into the question of the presses. The work itself consists, first, of the moving of the press cylinder, while subject to very little resistance until the interstices have been filled with water. Then the press cylinder, piston, &c., are expanded to the degree called for by the pressure, and finally the shaping of the work proper begins. The disposition of the piston depends upon the arrangement of the cylinder, which may either be open above so that the article to be subjected to pressure can be hung in from above, in which case the piston enters from above, or the cylinder is closed on the top by an arrangement similar to the breech of a modern gun, after the articles to be pressed have been put into the cylinder. In that case the pressure piston enters from below. Fig. 5 shows the construction of a press for 3300 atmospheres with an open cylinder and a double hydraulic transmission. The dimensions of the cylinder itself are rather small and permit of the compact construction of the whole. The pumping pressure is 1500 atmospheres, and the first cylinder is connected with the low pressure pump in order to do the preliminary work at a pressure of 200 atmospheres. The high pressure pump operates only when the effective stroke begins. Fig. 6 illustrates a press with a breech closing mechanism. The pressure cylinder has a larger diameter than that of the hydraulic cylinder, the charging and discharging of the working cylinder being carried on through the upper opening closed by the breech. The hydraulic piston enters from below. It has a smaller diameter than the working cylinder and a correspondingly greater stroke. Professor Riedler submits estimates of cost of a press and gives some figures relating to the capacity of a machine. In the case of a press having a working cylinder of 20 inches diameter and 60 inches depth 10,000 pieces 4 inches in diameter and 6 inches in depth can be made per day, counting 80 charges. He suggests that a central plant can readily undertake custom work.

George Westinghouse, Jr., of Pittsburgh, head of the Westinghouse interests in that city and formerly vice-president of the British Westinghouse Electric Mfg. Company, Limited, at Manchester, England, has been appointed president of the company. Mr. Westinghouse and his American associates control nearly one-third of the stock of the British company. The capital of the British company, who are erecting an \$8,000,000 electric plant at Trafford Park, near Manchester, in which

\$1,500,000 worth of American machinery will be installed, is \$5,000,000. As the Manchester works will not be completed for at least two years, the equipment provided for in the contracts secured in the interim by the British company will be manufactured at the Westinghouse plant in Pittsburgh. Recent important orders obtained include one for 75 electric motor equipments of 35 horse-power each, which are to be installed on the Halifax, Yorkshire, corporation tramway system. The American Westinghouse Company have been awarded a

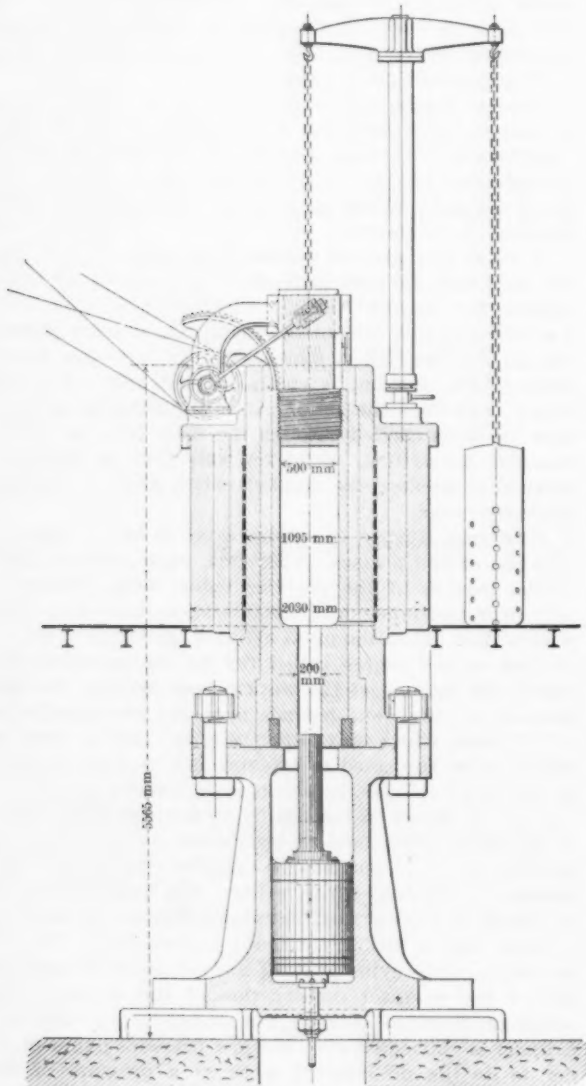


Fig. 6.—Hydraulic Press with Breech Closing Mechanism.

THE HUBER HYDRAULIC SHAPING SYSTEM.

contract for the electric equipment of the Spanish Government gun works at Trubie, Spain.

A new Russian cruiser described as a "destroyer of torpedo boat destroyers," has been ordered of Schichau of Elbing. She will have a speed of 25 knots, her length will be 358 feet, her displacement 3000 tons, and her engines will be of 17,000 horse-power. The vessel will have a turret forward, protected by 2-inch Krupp plates, in which will be placed six 45-pounder guns, and she will also carry eight smaller guns, two Maxims and six torpedo tubes.

Final arrangements have been made by the Turkish Government for the construction at the Cramp shipyard in Philadelphia of a swift 3500-ton cruiser, and work on the vessel is likely to begin within the next two months. The vessel will be of the protected cruiser type and will have a speed of 22 knots an hour.

Notes from Great Britain.

Offices of *The Iron Age*, HASTINGS HOUSE, 1 NORFOLK STREET, STRAND, LONDON, W. C., June 22, 1901.

The Markets.

Since my last report the markets have shown more firmness, and a slightly larger volume of business. The Midland Unmarked Bar Association have declared an increase of 5 shillings on standard selling prices, and it is thought that business can be transacted on this slight advance. In the Sheffield district there is also a marked improvement, the demand for Bessemer and Siemens steel being stronger than for some time past. Some of the Sheffield works are now running five days a week. For midsummer this is regarded as satisfactory. The crucible steel trade continues very quiet, in fact there is practically nothing being done in it. This is due to the high price of fuel; steel makers not being able to make the concessions demanded by the buyers, the buyers in their turn insistently holding off until they get their own terms. There is a brisk demand for steel castings for electrical plants, but prices are not remunerative; this is due to the increasing competition felt in the English market with German and American steel castings. The Middlesbrough market is again exceedingly weak, customers, being well covered for the next few weeks, all declining to commit themselves further. I append herewith standard quotations as they are fixed to-day:

Marked bars, £8 10s.; Earl of Dudley's brand, £9 2s. 6d.; second grade, £7 10s.; common unmarked ditto, £6 10s. to £6 12s. 6d.; North Staffordshire ditto, £6 10s. to £6 15s.; sheets, singles, £8 to £8 5s.; doubles, £8 2s. 6d. to £8 7s. 6d.; trebles, £8 15s. to £9; galvanized corrugated sheets, f.o.b. Liverpool, £11 10s. to £11 15s.; hoop iron, £7 10s.; nail rod and rivet iron, £7 to £7 10s.; gas strip, £6 7s. 6d. Steel: Bessemer billets, £5 2s. 6d. to £5 7s. 6d.; best Siemens ditto, £5 7s. 6d. to £5 12s. 6d.; mild steel bars, £7 to £7 10s.; steel plates, £6 15s. to £7 5s.; steel girders, £6 to £6 5s.; steel angles, £6 to £6 5s. Pig iron: Staffordshire cinder forge, 44 to 46 shillings; part mine, 49 to 52 shillings 6 pence; all mine, 52 shillings 6 pence to 60 shillings; best ditto, 70 to 75 shillings; cold blast, 95 to 105 shillings; Northamptonshire, 47 to 48 shillings 6 pence; Derbyshire, 48 shillings 6 pence to 50 shillings; Lincolnshire, 50 shillings 7 pence; North Staffordshire, 49 shillings 6 pence to 50 shillings 6 pence.

The foregoing prices refer mainly to the Midlands of England; Lancashire prices to-day are quoted for No. 3 foundry about 56 to 56 shillings 6 pence less 2½; Lincolnshire 50 shillings and Derbyshire 53 shillings 6 pence to 54 shillings 6 pence net. Forge qualities delivered Warrington remain on the basis of Lancashire 49 shillings 6 pence less 2½ and Lincolnshire 48 shillings 2 pence net. Middlesbrough iron continues weak, if anything, and open brands are to be bought readily at 53 shillings 4 pence net cash by rail Manchester, with special brands quoted by makers about 6 pence to 1 shilling more. Scotch iron is not quite maintaining late rates, and the average for Eglinton and Glengarnock, delivered Manchester docks, may be given as about 59 to 59 shillings 6 pence net. If anything, there is perhaps rather a stronger tone in the finished iron trade. Bar makers are better off for orders, and there is some stiffening up on recent specially low quotations. Delivered Manchester, £6 8s. to £6 10s. are about average prices for Lancashire, and £6 10s. to £6 15s. North Staffordshire bars. Sheets are also stronger, £8 5s. to £8 7s. 6d., being about the minimum, with hoops remaining at the basis rates of £7 2s. 6d. random to £7 7s. 6d.; special cut lengths delivered here and 2 shillings 6 pence less for shipment. Nut and bolt makers are only booking a moderate sort of business, with list basis rates unchanged and special quotations here and there to meet competition. The tendency toward improvement recently noted in the steel trade is being generally well maintained, and there is a moderate business offering at rather better prices for finished material. Hematites are steady at about 67 to 69 shillings, less 2½; local made billets, £4 15s. to £4 16s. 3d. net; steel bars, £6 12s. 6d.

to £6 15s.; common steel plates about £6 7s. 6d. to £6 10s.; steel boiler plates, £6 12s. 6d. to £6 15s. delivered in Manchester.

A New Amalgamation.

It is reported that negotiations are now progressing between the Harvey Steel Company of Great Britain, the Harvey Continental Steel Company and two other London concerns, with a view to amalgamation. The Harvey Steel Company of Great Britain have a capital of \$950,000, while the Harvey Continental Company have a capital of \$850,000. The board is a strong one, including C. Cammell, A. Vickers and C. E. Ellis. Of course, all readers of *The Iron Age* know that these companies own the world's patent rights for the Harvel steel process.

S. G. H.

The Tin Plate Scale.

At a meeting of the tin plate wage committee of the Amalgamated Association, and J. Warner Arms, representative of the American Tin Plate Company, held in Cleveland last week, the scale fixing wages for tin plate mills for the year beginning July 1 was arranged. The men received a slight advance on gauges 21 to 28 inclusive, while the catchers also got an advance of about 10 per cent. Some concessions were also made in the foot notes and material changes in clause No. 6 in the old scale, but from No. 5 in the new scale, were made. The new scale in full is as follows:

The Tin Plate Scale.

Gauges.	Roller.	Doub- ling.	Heat- ing.	Catcher.	Shearing on jaw or crocodile shears, Shearing and tin plate job or on sheet squaring	Screw boy.
8 to 11.....	\$1.71	\$0.97	\$0.98	\$0.59	...	...
12 and 13.....	1.97	1.00	1.03	.62	\$1.26	...
14 and 15.....	2.07	1.16	1.23	.71	...	\$0.41
16 and 17.....	2.77	1.58	1.52	.95	...	\$0.60
18 to 20.....	3.10	1.77	1.70	1.06	1.44	...
21 to 24.....	3.72	2.19	2.02	1.17	...	.50
25 and 26.....	3.94	2.30	2.22	1.24	1.31	.51
27 and 28.....	3.99	2.43	2.40	1.25	1.22	.53
29 and 30.....	4.19	2.76	2.68	1.43	1.01	.52
31.....	4.28	2.91	2.86	1.45	.97	.55
32.....	4.47	3.06	3.01	1.52	1.00	.55
33.....	4.76	3.22	3.10	1.60	1.03	.59
34.....	5.29	3.44	3.39	1.78	1.20	.61
35.....	5.54	3.62	3.60	1.88	1.20	.63
36.....	5.91	3.72	3.74	2.00	1.25	.66
37.....	5.99	3.76	3.79	2.02	1.21	.68
38.....	6.05	3.84	3.85	2.05	1.17	.70
39.....	6.38	4.22	4.14	2.16	1.29	.72
40.....	6.72	4.77	4.83	2.27	1.33	.75
41.....	6.90	5.01	5.06	2.32	1.40	.76
42.....	7.08	5.23	5.29	2.38	1.45	.77
43.....	7.25	5.46	5.52	2.44	1.49	.78
44.....	7.43	5.69	5.75	2.50	1.55	.79

Foot Notes.

1. Twenty (20) per cent. added for changed iron and steel.
2. Seventeen (17) per cent. added for pickle finished iron and steel, except shearman.
3. All iron or steel rolled on tin or black plate mills sheared to patterns of irregular shapes or circles, shall be paid for at the weight of the square sheet.
4. All plates and sheets cut down to smaller sizes of tin plate mills to be paid for at scale prices.
5. That all sheets or tin plates 14 square feet and over, when finished in six or more sheets to the pack, shall be paid for at the following rates above tin plate scale: 10 per cent. extra on 26 gauge and heavier, and 20 per cent. for all lighter gauges up to and including 32 gauge, and for all sheets or tin plate 15½ square feet and over, finished in fours, the same percentage shall apply, and it is understood that when plates worked on a tin mill less than the above superficial square feet are not first pickled, annealed, cold rolled and thoroughly treated as plate for tinning purposes before leaving the mill where they are worked, the above percentage shall apply. This does not include shearman, as his wages for sheet work is based on jaw or crocodile work. All black plate orders to be marked on the bar when brought to the mill.
6. Where improved squaring shears are used the com-

pany shall pay for opening packs and grinding the knives, and on jaw and crocodile shears the company to pay for opening packs, and in mills where plates are cut into 14 x 20 inches or smaller sizes, additional pay shall be arranged as follows: For four (4) or five (5) cuts, 10 cents per ton above scale price shall be paid, and 5 cents per ton additional for each extra cut thereafter.

7. Eight (8) hours shall be a day's work on tin or black plate mills, said mills not to follow out, only on Friday and Saturday, when a full turn's work shall not be made in less than seven (7) hours, when due notice shall be given of such change.

8. It is agreed that no more than three changes in the classification of sheet and tin plate mills can be made during the scale year, and due notice shall be given before such changes.

9. The weight of the bar to be marked on the bar when brought to the mill, and scales for weighing bars be furnished.

10. In each tin mill a blackboard shall be furnished, on which the complete weight of each turn shall be placed within a reasonable time after being made.

11. All tin and black plate shall be weighed by the company after being sheared and opened.

12. That the company furnish soft grease on Monday and any other warming up turns.

13. That all men working under the control of the Amalgamated Association shall not wait in the mill longer than three (3) hours without working.

14. Three (3) turns to constitute a day's work for shearman, except in case of accident or other contingencies.

15. Where a shearman feeds his own pack no deduction shall be made from his wages. When the scrap boy feeds the pack, 10 cents per turn shall be deducted, except in cases where mill construction or placing of shears prevents.

16. That all mills working iron or steel over 32 inches wide be classed as large mills, and ten (10) per cent. extra shall be paid for all such widths over 32 inches wide up to 35 inches wide; for 35 inches wide and over, containing less than 14 square feet, 20 per cent. extra shall be paid.

17. All crop ends shall be paired in equal lengths and, when possible, equal weight.

18. The standing turn and level hand men on tin mills shall receive their money direct from the company.

19. That ten (10) per cent. extra shall be paid for spreading bars.

20. That all iron and steel worked on tin mills, finished in eighths heavier than 27 gauge, be paid for at the same rate as 27 gauge.

21. That there shall not be any making up of lost weight on tin or black plate mills on a turn where crews are obliged to follow out or give up the mill in less time than seven hours.

22. That all cut downs be marked separately on board.

23. That where they have patent feeders on shears, the shearman to be paid 10 cents per turn extra, and shearman shall not use wrench or any other implement to assist feder in its work, except it be operating treadle. Eight hours shall constitute a day's work for shearman.

Output Same as Last Year.

1. Where 28 gauge is worked, in six or eight sheets to the pack, 6150 pounds shall be the limit.

2. On sizes 20½ x 56 an excess of 5 per cent. may be made, but on sizes less than 20 inches wide the per cent. cannot be made.

3. Turns below the limit may be made up during the same week for that week, but in making up lost weight on any turn, the output shall not exceed the limit over 500 pounds on 31 gauge and heavier, and 250 pounds on lighter gauges, and, when the drawback is made, the percentage excess cannot also be made on same turn.

4. When a turn's work is made within fifty (50) pounds of limit, it shall be considered a full turn, and the company cannot insist on the making up of said shortage.

The base weights to remain as in scale book, with the exception of 30 and 31 gauge minimum, which shall be 101 and 91 respectively.

Amalgamated Association Arrayed Against United States Steel Corporation.

The Sheet Mill Situation.

On Saturday, June 29, every sheet mill owned by the American Sheet Steel Company shut down for an indefinite period, owing to the fact that the American Sheet Steel Company refused to sign the Amalgamated scale for the sheet steel mills at Wellsville, McKeesport, Kirkpatrick mills at Leechburg, Scottdale Iron & Steel Company at Scottdale, and the Apollo Mills at Vandergrift. At a conference of the wage committees representing the American Sheet Steel Company and the Amalgamated Association, held in Pittsburgh on Saturday, June 29, the sheet scale was satisfactorily arranged until it came to the signing of it. Persifor F. Smith, who represented the American Sheet Steel Company, absolutely refused to sign the scale for the five mills named above, claiming that they were nonunion, had been for years, and that it was unfair of the Amalgamated Association to ask that the scale be signed for these mills. On behalf of the Amalgamated Association, Theodore J. Schaffer, president, stated that employees of union mills would not be allowed to work until the scale had been signed for all the mills owned by the American Sheet Steel Company. The question at issue, therefore, is not one of wages, but of recognition of the Amalgamated Association in nonunion mills of the American Sheet Steel Company.

Before the American Sheet Steel Company were organized a number of the most important sheet mills in the country ran nonunion and had done so for many years. Among these were the plants of the Apollo Iron & Steel Company at Apollo and Vandergrift, the W. Dewees Wood Company at McKeesport, the Wellsville Plate & Sheet Steel Company of Wellsville, Ohio; the Scottdale Iron & Steel Company at Scottdale and the Kirkpatrick Company of Leechburg. After the American Sheet Steel Company were organized the officials of the Amalgamated Association at once went to work to organize lodges among the employees of the plants named above, and succeeded in getting a great many of the employees of the W. Dewees Wood Works at McKeesport, the Apollo at Vandergrift, the Kirkpatrick Mills at Leechburg and the Scottdale Mills at Scottdale to affiliate themselves with the Amalgamated Association.

It will be recalled that two or three months ago labor troubles broke out in the W. Dewees Wood Company Works at McKeesport, but the matter was arranged by the Amalgamated Association agreeing to allow the mill to be operated as before until the expiration of the scale year, on June 30. The Amalgamated Association evidently intends to strengthen its position among the sheet mills, by attempting to make all the mills of the American Sheet Steel Company union. Whether this can be done remains to be seen. It is a fact, however, that the trouble among the sheet mills comes at an unfortunate time for the American Sheet Steel Company, as the demand for black and galvanized sheets is enormous and has filled the mills up with tonnage for the next three or four months. At the present time there is not a sheet mill owned by the American Sheet Steel Company in operation, but it is possible the trouble, which now has a very serious aspect, may be fixed up before this week is out. Neither side desires a long conflict, but, if respective positions are maintained, the sheet mills promise to be idle for an indefinite time.

The mills outside of the American Sheet Steel Company in the Central West which can be operated are those of Zug & Co., Limited, of Pittsburgh; the Whitaker Iron Company at Wheeling, W. Va.; the Wilkes Rolling Mill Company at Sharon, Pa., and the Niles Iron & Steel Company, Niles, Ohio. The last named concern completed their works only a short time since and are operating a three-mill plant. Zug & Co. have six mills, the Wilkes Rolling Mill Company two mills, and the Whitaker Iron Company six mills. However, most of the output at the latter concern is used by the Wheeling

Corrugating Company, an identified interest. It will be seen, therefore, that if the shut down of the sheet mills should continue for a prolonged period there would be a famine in sheets. There has been an enormous consumption for months, and stocks in the hands of jobbers all over the country are very low. In the meantime those having sheets to sell will probably either hold off, or else quote very much higher prices. In the East are quite a number of sheet mills that do not sign the scale and these will be operated right along, and, of course, will profit by the suspension of the mills in the West.

T. J. Schaffer, president of the Amalgamated Association, has given out the following statement relating to the trouble with the sheet mills:

"Much as I regret to make the statement, I must say that it seems to be a premeditated blow at organized labor. In the first place, Persifor F. Smith, who had absolute authority for the sheet steel combine in our conference, has for the last 20 years been one of the strongest advocates of nonunion labor. I will do Mr. Smith the credit, however, to say that he acted fairly and above board with us.

"It is but fair that the people should know the inside doings of the Saturday conference. When Mr. Smith presented to us an impossible proposition regarding those two mills, a proposition which he knew was impossible, I saw the trend of affairs. I told him it was 20 years since he had begun personally to antagonize the Amalgamated Association and union labor, and asked him whether the association was not much better and more worthy of consideration now than then. He admitted such was the case. I asked if it were not true that he had the opinion that the nonunion mills working at a lower rate of wages were in more satisfactory condition than the union mills. If this was the case I wanted to open the subject to debate, but Mr. Smith absolutely refused to debate the matter at all. He refused to do anything, but insisted that the Old Meadow and Saltsburg plants be eliminated from the union scale. Nothing was said about the McKeesport plant. This left me no alternative, so I simply said to Mr. Smith:

"As representative of the American Sheet Steel Company you have thrown down the gauntlet to organized labor, and as president of the Amalgamated Association I now take it up. It will be a fight to the finish."

"So far as I can see, there is no possible chance for another conference. Certainly we will not consider any such absurd proposition as that offered by Mr. Smith. I had hoped there would be no trouble between the workmen and the employers, but they have forced it. I have been abused many times by those I thought my friends because I did not go out and stir up trouble, for there are those who hate peace. I will now say what I said to Mr. Smith in the conference, 'If it is to be a strike, we will make it one to be remembered.' The officials now dealing with us have but little idea of the extent to which this strike will go, once on."

The mills owned by the American Sheet Steel Company, and which have closed down on account of the trouble, are as follows:

Etna-Standard Iron & Steel Company, Bridgeport, Ohio.
 Apollo Iron & Steel Company, Vandergrift, Pa.
 Cambridge Iron & Steel Company, Cambridge, Ohio.
 Canton Rolling Mill Company, Canton, Ohio.
 Chartiers Iron & Steel Company, Carnegie, Pa.
 Chester Rolling Mill Company, East Liverpool, Ohio.
 Corning Steel Company, Hammond, Ind.
 Coshocton Rolling Mill Company, Coshocton, Ohio.
 Dennison Rolling Mill Company, Dennison, Ohio.
 Dresden Iron & Steel Sheet Company, Dresden, Ohio.
 Falcon Iron & Nail Company, Niles, Ohio.
 Hyde Park Iron & Steel Company, Hyde Park, Pa.
 Kirkpatrick & Co., Leechburg, Pa.
 P. H. Laufman & Co., Paulton, Pa.
 Midland Steel Company, Muncie, Ind.
 New Philadelphia Iron & Steel Company, New Philadelphia, Ohio.
 Old Meadow Rolling Mill Company, Scottdale, Pa.
 Pittsburgh Sheet Mfg. Company, Shousetown, Pa.
 Piqua Rolling Mill Company (Cincinnati Corrugating Company), Piqua, Ohio.
 Reeves Iron Company, Canal Dover, Ohio.
 Republic Iron & Steel Company's sheet mills, outside of Alabama.
 Saltsburg Rolling Mill Company, Saltsburg, Pa.
 Scottdale Iron & Steel Company, Scottdale, Pa.

Struthers Iron & Steel Company, Struthers, Pa.
 W. Dewees Wood Company, McKeesport, Pa.
 Wellsville Plate & Sheet Iron Company, Wellsville, Ohio.
 West Penn Sheet Steel Company, Leechburg, Pa.
 Sharon Iron Company, Sharon, Pa.

The above plants contain from 275 to 300 sheet mills, and their output is between 2000 and 2500 tons of sheets per day.

The Bar Iron Situation.

The trouble which has caused a shut down of the puddling and finishing mills of the American Steel Hoop Company is much the same as that which caused the suspension of the American Sheet Steel Company. The conference between the Wage Committee of the Amalgamated Association and representatives of the American Steel Hoop Company and Republic Iron & Steel Company was held in Pittsburgh on Saturday afternoon, June 29, and lasted until Sunday morning, but it was impossible to arrive at a settlement of the scale, for the reason that the Amalgamated Association insisted that the American Steel Hoop Company sign the scale, not only for the plants which heretofore have been operated as union mills, but also for a number of works which have run nonunion for many years. There was no trouble in arriving at a settlement of the wage rates, but when it came down to signing the scale for all of the mills the representative of the American Steel Hoop Company positively refused to do this. James H. Nutt, representative of the Republic Iron & Steel Company, has made the following statement about the trouble:

"The officials of the American Steel Hoop Company were willing to sign the scale presented for the same mills they signed for last year, which includes the mills at Youngstown, and through the Mahoning Valley, and at Greenville, Sharon and other points in the Shenango Valley. The company also operate some mills in Pittsburgh and the East, and the claim made by the Amalgamated officials was that the steel company should sign for all the mills they controlled, which they declined to do, and thus the matter stands."

The American Steel Hoop Company employ about 14,000 men, the main offices being in the Empire Building, Pittsburgh. Of the dozen or more works owned by the concern, five have been operated as nonunion mills for many years, these being the J. Painter & Sons Works on the South Side, Pittsburgh; the Lindsay, McCutcheon Works in Allegheny, the William Clark's Son & Co. Works in Pittsburgh, Monessen Steel Company at Monessen, Pa.; the Portage Iron Company, Limited, at Duncansville, Pa. I. W. Jenks of the American Steel Hoop Company positively refused to sign the scale for the above mills, and as a result the Amalgamated Association has called out the men in the other mills in which the company agreed to sign the scale. As to whether the trouble will last for some time, it cannot now be stated. If the American Steel Hoop Company persist in their determination not to sign the scale for their nonunion mills, all their plants will be idle until their trouble is settled.

In the meantime, an agreement has been made with the Republic Iron & Steel Company, and all the bar iron mills in the West and South of that concern, more than 30 in number, will continue in operation right along, except such mills as may close down for inventory and repairs.

The Republic Iron & Steel Company are entirely independent of the United States Steel Corporation, and for this reason there is no probability of any trouble among their mills. This concern will undoubtedly be benefited by a shut down of the American Steel Hoop Company. The scale adopted and signed by the Republic Iron & Steel Company is printed elsewhere in this issue.

EZRA GREENWALD, president of the I. & E. Greenwald Company, died on the 28th ult., after a lingering illness of five months, at the advanced age of 84 years. Mr. Greenwald was born at Frederick, Md., on February 22, 1817, coming to Cincinnati on April 27, 1839. With his brother Isaac he commenced business in 1847, under the firm name of I. & E. Greenwald. In 1885 it was made a stock company, and at the death of his brother he became their president, which office he has held to the present time.

OBITUARY.

THOMAS C. CLARKE.

Thomas Curtis Clarke, one of the best known civil engineers of the United States, died in New York City on June 15, after a short illness, in his seventy-fourth year. Mr. Clarke was born in Newton, Mass., and was graduated from Harvard in 1848. His training in the civil engineering profession was had under the tutelage of Capt. John Childe of Springfield, Mass. Early in life Mr. Clarke was engaged in various railroad works, but he forsook that profession, making bridge building engineering a specialty. As an engineer in the construction of bridges he soon became widely known, being identified with the construction of many noted structures throughout the Union. One of the first of his works in this line was the building of the Chicago, Burlington & Quincy bridge at Quincy, Ill., which spans the Mississippi. This bridge Mr. Clarke built without the intervention of contractors (except for the ironwork). He designed all the machinery and plant, and was so successful that, in spite of a season of unusually high water, he opened the bridge for traffic in 15 months after the beginning. The bridge has never given any trouble, and no collisions of boats with the piers of any importance have ever taken place. Mr. Clarke was the senior partner in the firm of Clarke, Reeves & Co. of Phoenixville, Pa., who afterward became the Phoenix Bridge Company. Work of this company spread all over the Union, and comprised not only many of the most important bridges that have been built, but a considerable part of the elevated railroads of New York. In 1884 Mr. Clarke became one of the original members of the Union Bridge Company, who, in a short time after their formation, became one of the largest bridge building concerns in the world. During Mr. Clarke's connection with the concern they built in Australia the famous Hawkesbury Bridge, considered one of the most brilliant achievements of American engineers in foreign lands. Another bridge built about this time was across the Hudson at Poughkeepsie, the foundations of which are 135 feet below the water. Of this Mr. Clarke had especial charge. Of Mr. Clarke it was said that he had been concerned in the building of over 80 miles of bridges and viaducts. He was the consulting engineer of the Third Avenue Bridge at New York, for the design and construction of which he was entirely responsible. Mr. Clarke wrote many articles on engineering, many of which are preserved in the transactions of the American Society of Civil Engineers. He was a member of the American Society of Civil Engineers, and also of the American Society of Mechanical Engineers, the American Institute of Mining Engineers, the Institution of Civil Engineers (British), and of the American Philosophical Society of Philadelphia, the oldest scientific society in the United States.

JOHN M. MARLIN.

John M. Marlin, president of the Marlin Fire Arms Company, died July 1 at his home in New Haven, Conn., of Bright's disease. Mr. Marlin was one of the well-known fire arms manufacturers. He was born in Windsor, Conn., in 1836, and in 1864 started in business in New Haven, where his father conducted an old and well-known pistol factory. Mr. Marlin undertook the manufacture of revolvers when they came into use, under patents of his own, and later devised and manufactured the well-known Marlin repeating rifle and shot gun. Mr. Marlin is survived by a widow and two sons, both of the latter being identified with the company.

W. C. ROGERS, senior member of the Rogers & Baldwin Hardware Company, Springfield, Mo., died on the 19th ult., his death resulting from a complication of diseases. William Coombs Rogers was born in Newburyport, Mass., July 23, 1832. In early life he engaged in the hardware business, working for Blodgett, Brown & Co., of Boston. Later he established the wholesale firm of Rogers, Snelling & Co. in Boston. In 1871 Mr. Rogers sold his interest in Boston and went into business in Manchester, N. H. Here he remained until 1885, when with A. A. Baldwin he entered the jobbing hardware business at Springfield, Mo.

Lake Iron Ore Matters.

DULUTH, MINN., July 1, 1901.—One of the interesting phases of the Lake Superior situation now is the number of explorers and explorations being conducted along the Canadian side of the international line, most of them east of the Minnesota ranges. Several hundred explorers are in those fields now, under charge of competent engineers, working for various concerns and individuals, and much land is being taken up for its possible mineral value. The Canadian Northern road, which is now building its line from Lake Superior at Port Arthur, Ont., west to Manitoba, has about 100 men in the field under the supervision of E. F. Bradt, who had charge of the Minnesota Iron Company's exploration on the Menominee range some time ago, and has since conducted the explorations of the American Mining Company on the Atikokan range. The Canadian Northern runs west of Port Arthur along the southerly portion of the Algoma district, and the fields now being explored by Mr. Bradt are to the north of the Vermillion range, the Atikokan, Steep Rock Lake and Mattawin regions. Much land is being gone over, and many thousand acres will probably be taken under his direction. Mr. Flaherty, late of the Golden Star Mine, West Ontario, is also in the field with a large force. It is stated in Canada that he is working for the United States Steel Corporation, but this may be doubted. About 150 men are working for the Clergue syndicate to the east of the Nipigon River and Lake, and all through the northern country, and are not searching alone for iron, but for any deposit of mineral that may be developed and made commercially valuable. These men will be out all summer. Professor R. Pumpelly of Newport has also been in the region west of Port Arthur, near and south of Steep Rock Lake, and his associates have recently taken up more than 10,000 acres of land in that vicinity, all from the surface appearance. They have hope that a large deposit, or deposits, of soft ore may be found there, the land they have taken bearing the proper relations to outcrops. In addition to these large parties thus at work there are many smaller parties and individuals in the same field.

This work is significant, and it will be surprising if it does not result in some important discoveries. The ore bearing formations are as pronounced in these regions as on the Vermillion range, for instance, and there is no reason to think that there is no better ore thereabouts than has so far been found in quantity.

The McKellar-Grahame-Horne property, that was under option to the American Mining Company, and was recently dropped, has been taken up by the Atikokan Iron Company, who have made a first payment of \$30,000 on the locations. The purchase price is \$156,000. The buyers, who are the Duluth interest that originally gave the American Mining Company their option, have also taken a lot of additional locations on the formation and outcrop, and now have several miles of land.

Fire that destroyed the Quinnesec Falls hydraulic works of the Chapin Mine, several miles from that mine, did not close the mines subject to this power, for the United States Steel Corporation have been pushing along power plans that should, if occasion require, make these mines independent of water. The power plant will be rebuilt as fast as possible, however.

Steps looking to the economical and successful management of the mines of the companies now in the United States Steel Corporation are progressing, and will be ready to announce shortly. These plans have been under deliberation for some time and have required no small consideration. They are moving to successful issue. The Oliver Iron Mining Company, in their new and larger quarters in the Exchange Building, and the Lake Superior Consolidated Iron Mines, in their much enlarged quarters in the Lyceum Building, Duluth, are both bringing order out of their change very rapidly.

There is no let up to the tremendous pace at which ore is moving, and the fleets are all working harmoniously and systematically with magnificent results.

Corrigan, McKinney & Co. deny that the Stevenson

mine has sold 750,000 tons of ore or anywhere near that quantity. They state further that the mine is not only abundantly able to take care of contracts already made, but is in shape to take on additional orders. They report that they are not considering the opening of the Commodore mine this season. They deny the report that the entire Corrigan, McKinney & Co. properties are under option to the United States Steel Corporation. D. E. W.

The Machinists' Strike on the Pacific Coast.

SAN FRANCISCO, CAL., June 23, 1901.—It is now over a month since the machinists' strike was inaugurated on this coast and threw 7000 men out of work in this city and Oakland. Out of the number 4000 are given in round numbers as machinists, the rest molders, boiler makers, riveters, fitters, handy men, apprentices, laborers, &c. As far as surface indications go there is no sign of either side giving way as yet. I say as far as surface indications go, for there is an undercurrent of feeling among the men directly hostile to the strike. Many of them are not slow to say so. They went out against their better judgment and are very sorry that they did so, but they do not like to show the white feather and be ostracized. Expressions of this kind are to be heard every day, but still the strike does not come to an end. A couple of small places have given way, but they hardly affect the general result. With the strikers it is a matter of endurance, and as most of them have not saved much or are not able to save much, they must be nearly at the end of their resources. Of course, they have more or less credit at the retail establishments of the city, but that cannot be extended indefinitely and must be nearly at an end now. A machinist who had been in receipt of \$3.50 per day has simply lost \$101.50 in the interim, and this it is not possible for him ever to make up. The aid that can be afforded them by trade organization is but a drop in the ocean. Altogether the strikers, machinists and others, just lose \$18,000 a week. A benefit for them was held in the Mechanics' Pavillion, where there was an attendance of 9000; but this attendance, great as it was, would net them in money, after everything was settled up, only a fraction of one week's wages.

Of course, the shipbuilders, foundrymen, proprietors of boiler shops, &c., have lost, too, and to the full as much as the strikers, but they are better able to stand it, and should the strike fail, will make up in part for their loss—that is, in a measure they will, or rather, they will be able to keep in the field. As it is, they now pay 20 to 25 per cent. more in wages than do Eastern establishments, and they pay more for raw material—all the while that they have a more restricted field. Everything costs them more and they have to offset against this, say, the advantage of propinquity, and in some cases a slight advantage owing to the freight rates from the East. Were the wages here the same as in the East there would probably have been a very much shorter strike, but this is a case where our manufacturers cannot give in. They may give up business, but except in a few cases, where repair work is done or they have something that cannot be taken elsewhere, they could never compete. Very few establishments here run on specialties; most of them have to do work of every description, so that a man has no chance to get to be as expert in his department as he is in the East; not that he does not do as good work, but for lack of practice he cannot get through as much work in a given time as his brother of the East.

Of course, all eyes have been fixed on the progress of the strike in the East, as its course here very much depends on what you do at the other side of the Rockies. There have been reports current during the past few days that the strike here was near a settlement, but, of course, this cannot take place without a compromise or one side or another giving way. I think that some kind of compromise or another will be patched up soon and that business will be rushing again. The Morin Bros., on the Sound, settled it as far as they were concerned by getting in a nonunion force, but it is not so easy to do that here. J. O. L.

The Iron Age

New York, Thursday, July 4, 1901.

DAVID WILLIAMS COMPANY,	-	-	-	-	-	PUBLISHERS.
CHARLES KIRCHHOFF,	-	-	-	-	-	EDITOR.
GEO. W. COPE,	-	-	-	-	-	ASSOCIATE EDITOR, CHICAGO.
RICHARD R. WILLIAMS,	-	-	-	-	-	HARDWARE EDITOR.
JOHN S. KING,	-	-	-	-	-	BUSINESS MANAGER.

Fresh Capital in the Steel Industry.

The steel industry has been making history very fast lately, and a series of very interesting developments have been taking place. It has been a record of great strategic moves and counter moves which have brought new interests into the trade and has led to the investment of very large sums of new capital. On the whole, the developments have taken form in two distinct directions and have been different in character from a geographical point of view. In the East and South old established concerns have strengthened their position by raising large sums of money and by rounding out their supplies of raw material and increasing their plant. The Central West has become the home of a number of large new undertakings and a multitude of smaller new mills.

One of the most interesting strategical movements in the American iron trade, planned some time since, and now in course of execution, is the transfer of the Lackawanna Iron & Steel Company to their ideal site at Buffalo, N. Y. Backed by exceedingly strong financial interests with whom a very important group of moneyed railroad men have now allied themselves the new plant will nearly double that of the old works. Important bituminous coal properties have been secured, railroad connections have been provided and large by-product coking plants are to be erected. The company have for some years controlled, partially by lease and partially by purchase, a third interest in the Cornwall ore banks at Lebanon, Pa. Control has also been secured of the Talbot continuous open hearth process. The product will be steel rails, as heretofore, and steel billets as the basis of a series of collateral industries.

The Pennsylvania Steel Company years ago were caught in the midst of a far sighted and ambitious plan to transfer a large share of their operations to tidewater. The comprehensive undertaking could not be carried to the full length contemplated. It remained in abeyance and was partially crippled. Development along certain lines was persisted in. The growth of the export trade in steel rails and the rapid expansion of American ship-building vindicated the ideas which underlay the building of the Sparrow's Point works. The Steelton plant turned more and more toward specialties, like the manufacture of girder rails, like street railroad special works and to bridge building. The encouragement which better years brought made it possible to enlist additional capital. The drawback of dependence upon outside sources of ore was overcome by the acquisition of the Cuban mines of the Spanish-American Company and of the Cuban Steel Ore Company and of approximately a one-third interest in the Cornwall Ore Banks. A large plant of by-product coke ovens is to be built at Sparrow's Point. A very extensive addition is being made to the bridge works at Steelton, the open hearth plant and the blast furnace plants are being remodeled and other improvements are being carried forward. A very important fact is that capitalists identified with the Pennsylvania Railroad Company have greatly increased their interests in the concern.

Since the same powerful financial and railroad inter-

ests have taken hold of the Cambria Steel Company, reference may be made to developments at this plant.

Here, too, a very large amount of new money is flowing into the industry. New modern blast furnaces are being erected and a splendid new open hearth plant is under way, with heavy blooming mill machinery. The Cambria Steel Company have for many years had a very profitable adjunct in the Gautier Steel department. The company have their own ore properties in the lake ranges and have always possessed very extensive local coal interests and coking plant.

An interesting feature is the entry of the concern into steel car manufacturing.

Throughout Eastern Pennsylvania extensive additions have been made or are being developed. This is notably the case with the Lukens Iron & Steel Company, who are pushing to a front rank among the makers of plates of the country; the Reading Iron Company, who are expanding as makers of steel and of tubes; the Phoenix Iron Company, who are modernizing and expanding; Worth Brothers, who are enlarging, and the Diamond State Steel Company, who are becoming important producers of steel. The Midvale Steel Company shroud themselves in an atmosphere of mystery, but are supposed to be expanding quite rapidly. The Frick-Morse interests are building a large forge as an adjunct to the great shipyard on the Delaware River, and there is serious talk of an important furnace and steel plant on the same river, which is to be based on foreign ores.

The recent changes in the control of the Bethlehem Steel Company have less interest to the merchant steel trade proper, because that once famous rail mill is now chiefly a forge and a machine shop, with armor and guns as their principal product.

In the South the most interesting event has been the change in the management of the Tennessee Company, who are now under different control. Authority has been given to issue \$15,000,000 of bonds, and the evident tendency of the concern is to enter more and more into the finished steel trade. The new rail mill will be completed before long, and it is possible that the adjoining wire plant will soon pass into the hands of the steel company.

In the Pittsburgh district Jones & Laughlins, Limited, one of the famous firms of the country, have come to the front rapidly as enormous producers of steel in many finished forms. They have improved their position so far as raw materials are concerned, and are probably to-day the greatest of the works independent of the United States Steel Corporation.

There are a number of mills in the Pittsburgh district rolling a variety of products, of which some have made additions to capacity lately.

Among the new plants in the district is the Union Steel Company at Donora, who have purchased ore lands on the lakes, are building a blast furnace, steel works and equipment to enter the wire industry.

The Crucible Steel Company of America are developing in the direction of a much greater output of open hearth steel.

In the Valleys the Sharon Steel Company are the most important undertaking. The detailed description of the plant which we publish in this week's issue of *The Iron Age* clearly shows their scope, with the blast furnaces, open hearth steel plant, tin plate, wire and hoop departments. The new concern at the outstart purchased ore property. At Youngstown, Ohio, the Youngstown Iron, Sheet & Tube Company are building a puddling mill and will roll iron sheets and make iron merchant pipe.

In the Wheeling district the La Belle Iron Works are constructing a large tube plant at Steubenville, Ohio. The Wheeling Iron & Steel Company have made a similar move.

In the Cleveland district the Otis Steel Company remain one of the large outside concerns, and there have been some smaller newcomers. Throughout Ohio and Indiana quite a number of smaller sheet and bar mills have been started and are in course of construction.

In the Chicago district the rod mills of the Grand Crossing Tack Company and the Dillon-Griswold Wire Company have become important factors in the wire branch. The Inland Steel Company are developing some comprehensive plans.

Further West, the Colorado Fuel & Iron Company are looming up as a figure in the situation, which until recent years they could never claim to make. A good deal of money has been put in. On the Pacific Coast some very ambitious projects seem to be maturing, but it looks as though many years would elapse before the makers in other parts of country need pay much attention to possible competition from that source.

This very hasty review of what has been done in new development and what is now actually under way may suffice to draw attention to a movement which will tell when the days come of a struggle for orders at home and abroad.

For it must not be forgotten that the capacity of the plants of the United States Steel Corporation is expanding, even though not a single additional mill or furnace be put down. The company are carrying forward the improvements started by the constituent concerns. Beyond that, as we understand it, nothing will be done for the present. But very important though comparatively obscure work has been going on all along which has and is greatly increasing the efficiency of the old elements of plant. With full insight into the equipment and the methods of each individual works it has been possible to pick out the very best features of each and to introduce them so far as circumstances permitted into all the works of the different consolidations. In the aggregate the outlay must have been quite large, but for immediately valuable results money could probably be better expended.

A general review of the situation justifies the statement that a good deal of fresh capital has entered the iron industry. The last two years have not been times of investing such funds at the lowest figure, yet the position of the American iron industry has been much strengthened. When this new capital will become militant must depend upon the demand. If it keeps up there will be continued armed neutrality. If it does not we may have some lively times, both in the foreign and in the domestic markets.

The Seventh Week of the Machinists' Strike.

The machinists' strike has continued long enough to prove that many of the manufacturers are thoroughly in earnest and are prepared to maintain their position indefinitely. The union leaders may not be satisfied with this state of affairs, but they are probably quite well convinced of it. They have naturally endeavored to make capital out of the few cases in which employers have agreed to their terms, but are meeting with discouraging results in the great machinery strongholds. A strike of this character is a very peculiar contest, inasmuch as the fighting can only be forced by one of the parties. The employers can assume an aggressive attitude and use every effort to induce workmen to take the places vacated by the strikers. But the

striking workmen, on the other hand, can do nothing toward forcing their former employers to open their shops on the terms demanded. They can only wait and hope, or perchance maltreat such of their fellows as are desirous of working. Waiting is a most wearisome occupation, and especially so when but a beggarly pittance is being received from the union treasury and there are other mouths to be fed.

The workmen were led into this strike by the delusion of their leaders, who were of the opinion that victory would be very easily won. They hoped, in the first place, that the manufacturers were so busy that they could not afford to have the regular operation of their plants interrupted; second, that the machinists were so completely organized that at the word of command every man in a shop would drop his tools and leave the shop deserted, and third, that the demands of the machinists would be backed by other labor organizations with a show of strength that would be intimidating to the manufacturers. The labor leaders have found by this time that very few manufacturers are in such a position that they are willing to sacrifice their independence for all time for the sake of getting out a few contracts immediately pressing. They have also found that in very few shops have they been able to call out all the members of their own craft, but that in numerous instances many of these prefer to be free men and will continue at work as long as they have employment and are not in actual danger of having their heads broken. And they have further found that they are receiving little direct strength from other labor organizations in endeavoring to enforce their demands, as the manufacturers are so far from being intimidated on such grounds that they freely declare their readiness to meet other threatened labor troubles and settle all of them at once. The union leaders in other branches are wisely displaying conservatism in not making the machinists' troubles their own, as they would thus endanger the continued recognition of their organizations. Some stress has been placed on the assistance to be expected from the Amalgamated Engineers of Great Britain, but this will probably be of a purely sentimental and sympathetic character. That organization sustained a crushing defeat but a few years since in a long contest with British manufacturers, and very probably has no funds to spare for the support of American workmen whose products compete with theirs.

The outlook for the manufacturers who are standing together to maintain the right of running their own shops is steadily growing more promising. Much was gained when the first week ended with so many of them in line. The passage of the succeeding weeks simply intensified the feeling of determination to maintain their ground, and now so long a time has elapsed since the controversy was acutely precipitated that it is felt that the end is not far off. Steps have been taken in a number of cities to secure adequate legal protection for such workmen as are inclined to return to their old positions. This is unfortunately necessary, notwithstanding the allegations of labor leaders that their members are peace loving and law abiding. Under similar circumstances during past strikes free men have been cruelly assaulted, and it is wise to take precautions. The fact is well known that a large percentage of the force of men employed in every shop was opposed to a strike and will take the first opportunity to return to work when it can be done with safety. These men are growing restive as they reflect on the wages they have lost. Unless the union can pay them a much better stipend than has been given them thus

far, it will not be many days until they are found in their old places.

It may be well at this time to correct a wrong impression relative to the cause of the controversy. The manufacturers are not opposing a reasonable shortening of the working day. The working day of all shops operated by members of the National Metal Trades Association would at this time be nine hours if the International Association of Machinists had not attempted to force the manufacturers to comply with their demands in other respects. The consequence is that the nine-hour day has been lost, for the present at least, and such a revulsion of sentiment has been created against the machinists' union that the manufacturers now stand for open shops and against union rule.

The Philippine, Cuban and Porto Rican Tariffs.

WASHINGTON, D. C., July 2, 1901.—The revised Philippine tariff has been ordered by the Secretary of War to be printed for final promulgation, and it is expected that the full text of the revision will be made public within a few days. It is the present understanding that the new tariff will be forwarded by mail to the Taft Commission, by which it will be officially proclaimed immediately after its receipt, to take effect on very short notice from the date of the proclamation. Any hardship that might otherwise follow such procedure will be relieved by the publication of the tariff in this country at least 30 days before it takes effect, and by a provision admitting merchandise in transit when the revision takes effect at the rates of the old tariff when such rates are lower than those provided by the revision. As the revised rates in nearly all cases are lower than those now in force very little hardship can result from the change and the War Department officials are anxious that the notice to be given shall be as short as possible to prevent the speculative holding back of merchandise.

No changes of importance have been made in the iron and steel schedule that have not been announced in these dispatches. The plan of providing a minimum ad valorem limiting the duty on machine tools and highly manufactured machinery of all kinds has been finally adopted, so that the new tariff will provide a specific duty for all such manufactures with the proviso that in no case shall such duty amount to less than 15 per cent.

The Insular Bureau has received from the Tariff Commission, sitting in Havana, the text of certain of the Cuban schedules which will be materially lower than those now in force, but the revision is not yet completed. The metal schedule is receiving special attention, particularly with reference to such articles as may be used for agricultural purposes. The present tariff admits agricultural implements free of duty under the general provision, "plows, hoes, machetes, cane knives, &c., exclusively used for agricultural purposes."

The collector at Havana has reported to the Department that free entry has been claimed for a large number of implements which may or may not be intended to be exclusively used for agricultural purposes, and it is therefore proposed to lengthen this list and endeavor to embrace therein a full category of implements entitled to free entry. It is also probable that the new tariff will continue the present administrative provision which directs the classification to be determined "by the use to which the implement is to be put, proved to the satisfaction of the collector of customs."

The War Department has been besieged with suggestions as to how the Cuban and Philippine tariffs may be arranged to give American manufacturers advantages over foreign competitors, but to such communications the answer has invariably been returned that it is not the purpose of the Department to provide discriminations of any kind. The new tariffs both for the Philippines and for Cuba will be so adjusted as not to discrim-

inate against American manufacturers, but that is as far as the Department is willing to go.

The announcement that the Porto Rican Legislature will meet in special session on July 4 for the purpose of enacting a memorial to the President intended to demonstrate that the revenues to be derived under the Hollander law are sufficient to meet the expenditures of the island, and that therefore free trade should be proclaimed between the United States and Porto Rico under the terms of the Foraker act, has brought to a sharp issue the question as to whether the interests which it is claimed will be adversely affected by free trade are strong enough to induce the administration to postpone action at least until Congress meets. Domestic tobacco and beet sugar producers have been at work for some time setting on foot a movement to induce Congress to extend the present tariff relations with the island for at least another year, and this influence has also been at work in Porto Rico, where the object has been to prevent the action which the Legislature is now preparing to take. The effort having thus far failed, two resources yet remain—first, to induce the President to question the adequacy of the internal revenue taxes to provide revenues for the island, and, second, to induce Congress to postpone free trade a year or more. Under the Foraker act, according to the best authorities, the President has discretion to determine when the revenues are sufficient, and it is also the best opinion that a notice of 30, 60 or 90 days may be given in the President's proclamation before the taking effect of free trade. Without the action of Congress, however, free trade will be inaugurated March 2 next in any event, and taking all circumstances into account it hardly seems likely that free commercial intercourse with the island will be postponed. W. L. C.

The Molders' Conference.

CHICAGO, ILL., July 2, 1901.—(By Telegraph.)—A conference was held at the Sherman House to-day between committees of the National Foundrymen's Association and the Iron Molders' Union of America to establish the wage scale for the ensuing year. The former was represented by Geo. Q. Thornton, St. Louis; I. H. Reynolds, Milwaukee; H. S. Hodge, Detroit; H. J. Gosiger, Cincinnati, and W. A. Jones, Chicago. The Molders' Union was represented by Martin Fox, M. J. Kehoe, David Black, W. J. Phillips and John Campbell. The old scale was \$2.50 minimum for bench molders and \$2.75 for floor men. The molders first asked \$3 flat. They modified their demand to \$2.85 per day minimum for floor and bench molders for Chicago and vicinity. This was refused by the foundrymen, who offered \$2.85 for floor molders and \$2.65 for bench molders. This not being accepted by the molders, further consideration was postponed until July 10, the molders meanwhile remaining at work.

Information Wanted.—A correspondent desires to obtain a machine for drying rice after it has been washed. The capacity of the machine must be 15 to 20 bags of rice per 12 hours, and must be mounted on a truck.

F. A. Lawyer of Savannah, Ga., recounts an experience which he had with the Smooth-On compound made by the Smooth-On Mfg. Company of Jersey City. When in the employ of the Virginia Carolina Chemical Company the so-called "acid eggs" used in fertilizer manufacture were rapidly destroyed by the acid. He used the compound to patch up a corroded acid egg. It ran under 60 pounds pressure for over five months.

The site of the American Sheet Steel Company's old plant in Sharon, Pa., will shortly be utilized for the erection of a mill of another description, say the Sharon papers.

The blacksmiths in the employ of the Sharon Steel Company, at Sharon, Pa., have been given an advance in wages of 12½ per cent., time and a half for all overtime and work performed on legal holidays and Sundays, 58½ hours to constitute a week's work.

PERSONAL.

Albert Ott, who has had charge for 13 years of the engine departments of the Vonnegut Hardware Company of Indianapolis, will take the management of the De Frees Thermometer Company of that city.

T. G. Crawford, formerly superintendent of the Edgar Thomson blast furnaces, at Bessemer, Pa., has been made general manager of the National Tube Works, at McKeesport, Pa., succeeding Taylor Alderdice, who has been given a higher position with the United States Steel Corporation.

Hugh Anderson, formerly master mechanic of the Hazleton Works of the Republic Iron & Steel Company, Youngstown, Ohio, but who has accepted a similar position with the Youngstown Iron & Steel Roofing Company, was presented with a gold watch chain and charm by the employees of the Hazleton works.

W. Vernon Phillips of F. R. Phillips & Sons Company, Philadelphia, builders of tin plate machinery, has sailed for Liverpool on a business trip in the interests of the firm. He will go to Wales and the Continent, returning about September 15.

John H. Dawson, dealer in all kinds of brass and iron working machinery, Canal and Washington streets, Chicago, has gone for a month's stay to the Atlantic Coast to recuperate.

E. K. Sober has resigned as manager of the American Sheet Steel Company's plant at Canton, Ohio. He is succeeded by Mr. Ward, manager of the company's Cambridge, Ohio, plant.

W. W. Wilson has succeeded Ernest Vaughn as superintendent of the Girard, Ohio, plant of the American Steel Hoop Company.

George Westinghouse, Jr., has been elected president of the British Westinghouse Electric & Mfg. Company, of which he was formerly the vice-president.

Peter L. Kimberly of Sharon, Pa., was seriously injured in the wreck of a Pittsburgh & Lake Erie train at South Monaca, Pa., last week. According to late accounts Mr. Kimberly was making good progress toward recovery.

James B. Bailey, president of C. L. Bailey & Co., Incorporated, proprietors of the Chesapeake Nail Works, Harrisburg, Pa., has been elected treasurer and general manager of the Central Iron & Steel Company of Harrisburg, to succeed the late Gilbert M. McCauley, and C. L. Bailey, Jr., was elected a director of the concern.

L. W. Moen, vice-president of the Compressed Steel Company, fractured one of his legs last week through the collapse of an automobile he was riding to visit the Illingworth Steel Works, at Newark, N. J.

President Samuel Gompers of the American Federation of Labor was seriously injured last week by being thrown from a street car in Washington, D. C.

L. S. Gardner, superintendent of the Gardner Motor Works of New Orleans, La., is suffering from serious injuries at the hands of striking machinists while endeavoring to protect a nonunion workman who was being beaten by the strikers.

Francis W. Heisler, purchasing agent of the American Bridge Company, has tendered his resignation, to take effect July 1.

Charles M. Schwab, president of the United States Steel Corporation, recounts this experience. Recently he came to Braddock to make an inspection of the Edgar Thomson plant. A buggy with a colored driver was awaiting him at the station. He had just settled down into his seat beside the negro when he overheard a working woman calling to her boy: "Look, look, Johnnie, there is the famous Mr. Schwab!" The boy glanced at the occupants of the buggy, and then turned to his mother with the question: "Which one?"

F. A. Lapham, formerly connected with the sales department of the National Steel Company, has been appointed general sales manager of the Tennessee Coal, Iron & Railroad Company, with headquarters at New York, effective July 1. Mr. Lapham will handle the

pig iron, steel and rolling mill products of the company, both domestic and foreign.

The Machinists' Strike.

The Strike Broken.

The most important feature of the strike situation during the past week was the return of the machinists in Plainfield. The men at the Pond Machine Tool Works went to work Monday, practically in a body. The absentees were those who had left town to seek employment. No concessions were made by the company. That they will treat their men with the greatest fairness is to be assumed from the fact that when the shop foremen returned to work two weeks ago they were paid in full for the time they had been out. What course the company will pursue in regard to the men is not made public, but it is to be assumed that it will be a liberal one.

Twenty-five per cent. of the force of the Potter Printing Press Company started work Monday. The rest came back Tuesday on a 54-hour basis, the wages being increased about 4 per cent.

At Walter Scott & Co.'s the men will work 55 hours at an advance of 6 per cent. in wages. The arrangement is granted to all the departments. The company formerly paid at the rate of 60 hours for 59 hours' work.

A peculiar case is that of the Aluminum Plate & Press Company. When the strike took effect, May 20, they agreed to the demands of the men. The understanding was that they would grant the 54 hours, with no pay reduction, until the other works in town came to some agreement. When the strike was settled they were to adjust their hours and wages in accordance with their neighbors. In other words, any rates made by the Pond, Potter and Scott companies were to control the hours and pay of the Aluminum Company, whose men fell in with the plan. But, as stated above, the Pond, Potter and Scott concerns have each settled on a different basis. The Aluminum Company are on the horns of a dilemma, and just exactly how they will solve the problem remains to be seen.

While it is yet too early to write the history of the strike, there are certain aspects that stand out prominently. In the great majority of cases the men have gained something. The gain has generally been a reduction in hours and a varied increase in wages. Those firms which have made no concessions whatever have fought for the right of conducting their affairs without coercion. That they will grant something after their men have returned is more than probable. Most of them do not fear an increase in wages or a reduction of hours, but they do object to the way the demands were presented.

But the International Machinists' Association has lost completely in its wild struggle for recognition. It has simply been ignored in all parts of the country and it now has no agreement with manufacturers. The men in all the shops are treated as individuals, and their membership in the association is a drawback rather than a help.

A Call for Funds.

WASHINGTON, D. C., July 2, 1901.—The International Association of Machinists has made its first call for financial assistance upon the American Federation of Labor, and the Federation has responded with an assessment of 5 cents per capita upon the entire membership of the labor organizations affiliated thereunder. This membership is estimated at 2,000,000, and it is therefore stated that the assessment will aggregate \$100,000, and will be available immediately. It is stated that the machinists have spent between \$125,000 and \$130,000 in sustaining their striking membership since May 20. Financial assistance was pledged to the machinists by the Federation of Labor before the strike was ordered, the officers of the Federation basing their action upon the theory that the machinists' strike might properly be regarded as a part of the general movement for a shorter day, which the Federation is now pushing. The

Machinists' Association will disburse the Federations' assessment money to the unemployed machinists, who are now said to number about 15,000, but if the allotment per capita is equal to the actual living expenses of the strikers the Federation's assessment will hardly support them more than a few days. It is believed that the greater portion of the financial assistance rendered the strikers must come from machinists who are now employed and who are enrolled in the association to the number of about 60,000.

President James O'Connell of the International Association of Machinists has spent several days in New York during the past week conferring with the officials of the Delaware & Lackawanna Railway regarding the strike of machinists on that system, but without result, so far as a settlement is concerned. Mr. O'Connell is disappointed at the failure of his efforts to reach an agreement, which he attributes to the stubbornness of the railway officials, and he states that the contest has now resolved itself into a question of endurance. The railroad officials assert, however, that the Machinists' Association has directly discriminated against their road, having ordered out 4000 of their men on May 5, more than two weeks prior to the beginning of the general strike. Mr. O'Connell attempts an explanation of this fact by stating that a committee of machinists appointed to meet the railway officials for a preliminary talk regarding the proposed nine-hour day were so discourteously treated that when they reported their reception to the men the latter at once voted for a strike.

THE NATIONAL CASH REGISTER COMPANY.

A series of conferences have been held in this city between the officers of the Machinists' Association and representatives of the National Cash Register Company of Dayton, Ohio, who employ about 2500 men, 1100 of whom are machinists. In the case of this company the Machinists' Association not only demanded a nine-hour day with ten hours' pay, but insisted upon the reinstatement of four or five metal polishers whom the company had discharged for cause. After several conferences the company agreed to the shorter day with the same pay, but positively refused to reinstate the discharged employees. The absurdity of contending any further on this point seems to have impressed itself upon the officials of the Machinists' Association, for they have directed that a vote be taken by all the company's men as to whether they will return to work in spite of the refusal of the company to put back their discharged employees.

Reports received here state that the Reading Railway shops strike, which began about ten days ago, has been settled on a basis of mutual concessions made by both sides. The road has refused to recognize the union, but will increase their scale of wages, and the men have been ordered to return to work.

THE NEWPORT NEWS YARD.

The strike at the shipyards of the Newport News Ship Building & Dry Dock Company appears to have reached a deadlock. Of the company's 7500 men only about 3000 are now employed, but of the 4500 who are idle a large percentage have been laid off by the company because the work has reached a stage where it cannot be satisfactorily prosecuted any further without the services of the striking machinists. The machinists assert that in spite of the pressure being brought to bear upon them by idle employees of other classes 98 per cent. of their own membership have voted to continue the strike indefinitely. In a formal statement Superintendent Post asserts that no concessions can be made to the men, and reiterates his former statement that to grant the demands of the machinists would mean to put the entire plant on a nine-hour basis, which is out of the question in view of present contracts.

A NATIONAL CONFERENCE OF METAL WORKERS.

A national conference of metal workers will be held here during the present month in accordance with the following notice, which emanates from the headquarters in this city:

"On July 22 there will be a meeting in this city of representatives of all the metal workers' associations for the purpose of consummating the movement begun in

Louisville, Ky., last December, to form an offensive and defensive organization of metal workers throughout the country. It is not the intention to interfere with the national or international associations of any particular branch, but merely to have an understanding whereby any strike movement or labor trouble shall be prosecuted by all the trades as a whole. It will embrace 10 or 11 organizations and 200,000 men. The officers of the temporary organization formed in Louisville consisted of James J. Cramer of Richmond, temporary president, and L. R. Thomas of New York, temporary secretary."

W. L. C.

Boston.

BOSTON, MASS., July 1, 1901.—The strike of the machinists at the Goodyear Shoe Machinery Company's works, on Albany street, this city, was declared off after a heated debate, at a meeting of Machinists' Lodge 264, which lasted from 8 p. m. until after midnight last Saturday. It is believed that a tacit agreement has been reached, by which the men return to work on a basis of 55 hours per week, at the same wages formerly paid for 60 hours, but no direct confirmation of this is obtainable. A number of the men have contracts for five years. These men, numbering 308, struck May 20, to secure a day of nine hours and an increase of 12½ per cent. in wages. The company employed pickets to patrol the vicinity of the strikers' headquarters and sent nonunion gang bosses to interview the strikers at their homes, thereby inducing some to return to work. The officers of the union claim that the failure of the strike was due to the fact that only six of the men employed in the Goodyear shops were members of the union before May 1, and that they were not properly organized for a long struggle. Some of the strikers will not be re-employed by the company, and others will not go to work unless they are given a work day of nine hours and an increase in wages. There is now little probability of a strike in the Winchester and Beverly shops of the United Shoe Machinery Company.

The machinists do not intend to cease their agitation for a work day of nine hours so long as a mechanic is compelled to work one hour per day longer than unskilled laborers, it is stated, and although temporarily defeated, they do not relish the result, and will bide their time.

There was an unsuccessful attempt to declare off the strike at the Blake Pump Works, at East Cambridge, at a meeting of the union yesterday afternoon.

Up to date 5000 men have secured a shorter work day in 150 shops in Boston and vicinity. Since January 1, the membership of the Machinists' Union has increased from 100 to 2500 in this vicinity. About 650 machinists are still out. The shops still nominally affected are the Atlantic Works, at East Boston, 70 men; American Tool Company, at Boston and Hyde Park, 250 men; Woven Hose Company, at Cambridge, 20 men, and Blake Pump Works, 250 men. The latter concern, however, have eventually won against the strikers, by securing new men.

Employers of machinists and blacksmiths in Salem, Peabody and Beverly, Mass., held a meeting last week, at which they voted that nine hours should constitute a day's work, without reduction of wages, and that 50 cents per hour for first-class help be charged for all work after July 1. The price was 40 cents in Salem, 50 cents in Lynn and 60 cents in Boston. Charles H. Wilson, assistant general manager of the United Shoe Machinery Company, says that that company were not parties to the above mentioned agreement.

Owing to the machinists' strike, the American Tool & Machine Company will close their Boston shop, where they employed 30 persons in repair work. This work will now be done at the company's Hyde Park shop. Melvin H. Barker, the manager of the company, is quoted as saying that 70 men are working in the Hyde Park shop, and although since the strike began the company have refused contracts amounting to \$50,000, some of these were only countermanded temporarily and will be renewed when they are desired. The company, according to their officials, propose to take no dictation from labor unions, but will treat with their men as in-

dividuals. Boston manufacturers, it is stated by the strikers, have lost many valuable orders for machinery since their strike began.

Providence.

PROVIDENCE, R. I.—The Harris-Corliss Steam Engine Company granted the nine-hour working day to the machinists in their employ Tuesday, and concessions practically the same as those granted by the Providence Engineering Company and the Corliss Steam Engine Works of the International Power Company a few weeks ago. The Harris-Corliss concession was purely voluntary on the part of the management of the company, and the short hour system will go into effect immediately. According to the plan the men will be paid time and one-half for all overtime until midnight and double time for work later and on Sundays and holidays. The question of wages will be adjusted in an entirely satisfactory manner. This concession is regarded as notable, and by the machinists is considered as remarkable, inasmuch as the management granted it without any demand on the part of the employees. Up to date four manufacturing concerns have complied with the demands of the men and have adopted the nine-hour day and the probabilities are good for the falling into line of many more of the other concerns.

Naugatuck Valley.

A dispatch from the Whitlock Printing Press Mfg. Company of Derby states that the men are still out, with apparently as firm ranks as when they left the shop. Have offered them no concessions, and do not expect to, but have posted declaration of principles and shop hours, which are practically the same as those adopted by the association in Milwaukee.

The Russell & Erwin Mfg. Company of New Britain report that the strikers appear to be very weary, the general impression being that they are on their last legs.

Conditions are unchanged at Bridgeport, Waterbury and Ansonia. The men are gradually returning in all the shops in the former place. There has been no break of any importance at Waterbury. The Farrel Foundry & Machine Company are running nonunion, but with a reduced force.

New York and Vicinity.

In New York City there has been no change of importance. The works of Henry R. Worthington, Garvin Machine Company and the Crocker-Wheeler Electric Company are running nonunion and with practically a full complement. The Hewes & Phillips Iron Works, Newark, N. J., say that "the strike situation is much brighter. Several apprentices, journeymen and machinists returned to work; every indication that we shall have at least half our force again with us by July 1. Reliably informed that the striking machinists have received only about \$6 in benefits from the lodge since the strike began, and are rapidly becoming discouraged with the situation."

The Turner Machine Company, in a report to the association, state: "June 28 a deputation from strikers called and asked whether any arrangements could be made for resuming work. We told them our shop was open for them to begin under the old terms during the next few days; after that time we should fill their places with outside men; that no additional concessions would be made. They reported to their committee, returned and stated they would wait a few days longer. Our impression is that they will be back to work again very soon. We are informed that the Hatters' Union passed resolutions: 'Any machinist going into a union hat factory to repair machines will have to hold a Machinists' Union card.'"

At S. L. Moore & Sons Company, Ellizabethport, N. J., the men are all back. They work 55 hours for 55½ hours' pay until October 1. There is no agreement after that.

Buffalo.

The Iroquois Iron Works, in a communication to the association, report: Strike over in these works; all machinists returned June 26 on exactly same conditions existing before they struck. While on strike they demanded that we discharge one of our free men who refused to strike. We told them that the company would never dis-

charge a man for such a reason; they waited a while, but all returned to work June 26. We are working 55 hours a week, allowing Saturday half holidays during the summer. Overtime will not be paid in any case until after a 10-hour day; then time and a half.

Camden, N. J.

The strike of machinists against the New York Shipbuilding Company and John H. Dialogue & Son, both of Camden, may soon be declared off. At the New York Company's yard yesterday it was stated that some of the men have already returned to work. The strike has lasted six weeks and the strikers have not received the financial aid promised them by the Machinists' Union.

Milwaukee.

The Filer & Stowell Company state that the local shops report considerable gain. Three-fourths of Prinz & Rau Mfg. Company's old men returned unconditionally. They started five machines Thursday. The strikers respect the Vilter injunction. Half hearted picketing continues, but at considerable distance from the shop.

Indianapolis.

The Chandler & Taylor Company wire us as follows: "Machinists returned June 24, accepting our proposition made to them May 20, with slight modifications as to overtime."

Seneca Falls, N. Y.

The following has been received from the Goulds Mfg. Company: "As a matter which may be of interest to your readers, we beg to state that labor troubles with our men, who have been out since May 20, have been adjusted, and work will be resumed in both our factories on Monday, July 1. The men return to work under a private arrangement just effected."

Scranton, Pa.

A press dispatch from Scranton, under date of the 1st, says: The strike at the shops of the American Locomotive Works is at an end. To-day 71, mostly boiler-makers, returned. To-night the remainder, numbering in all 500, decided to go back in a body. A committee from the union waited on Superintendent Delaney to make terms. He told them that the only concession he could make was to guarantee them that they would not be discriminated against.

Reading Pa.

The strike at the Reading Railroad shops is over. The following terms proposed by Mr. Baer were accepted: "The men to return to work at once just as they were before they went out.

"The men to be restored to the Philadelphia & Reading Relief Association with like effect as though they had not left the employ of the company.

"The labor union not to be recognized.

"After the men have returned to work a committee of the shops, representing all the workmen, can be appointed by our employees. We will appoint a committee composed of superintendents and foremen of the shops to meet the workmen's committee, and the whole subject of wages to be considered by this joint committee, with power to agree upon a new scale of wages, which shall be fair and just, both to the men and the company. These committees are to begin work as quickly as they are elected. In case, after a reasonable effort, the joint committee cannot agree, I will personally, after September 1, 1901, meet with the joint committee and endeavor to adjust the differences.

"It is understood that if any new scale is agreed upon it shall, whenever adopted, be effective as of July 1, 1901.

"Transportation will be given to the committee to visit any of the shops with a view of ascertaining the scale of wages in force in such shops."

Cincinnati.

CINCINNATI, OHIO, July 2, 1901.—(By Telegraph).—There is an air of uncertainty in the machinists' strike situation here, with an increasing feeling that the end is not far off. The actual developments for the past week, so far as can be learned definitely, amount to the return of about 200 additional men, making a total of 400 who have returned since June 24. These have all come back without any concessions whatever on the part of the employers. While there has been no en-

couragement held out to the strikers from the Metal Trades Association as a body, or by the individual members thereof, yet there have been self appointed committees from the strikers' ranks in conference with a few of the shop owners, but so far nothing has come of these conferences. A notice was posted last Friday at the machinists' headquarters in effect that the strike benefits would be discontinued, no reason being offered for the announcement. Since then it is understood that promises have been made to resume the benefits some time later this week, but in view of the fact that this is the seventh week of the strike, and not more than one benefit has already been paid, the men are losing heart. The strikers have established a summer camp in the outskirts of Cincinnati, where they claim to be able to take care of 1000 men, and it is believed that quite a number of them have availed themselves of the opportunity for an outing. At the request of a prominent politician here J. W. Dunn of the Laidlaw-Dunn-Gordon branch of the International Pump Company has had a conference with Mr. Schilling, representing the strikers, but so far nothing has come of the meeting, and it is asserted by those claiming to be in a position to know that the company in question have no intention to treat with the strikers apart from the other members of the Metal Trades Association, the meeting being purely out of compliment to the politician referred to.

Hamilton, Ohio.

The men are still out at the Niles Tool Works Company, and at the present there are no signs of a settlement.

Minneapolis.

Strong & Northway report the return of a number of strikers under former conditions, without concessions or promise of any kind.

Seattle.

A press dispatch from Seattle states that the Washington Iron Works have resumed operations with a force of nonunion machinists. This action is in pursuance of the resolution adopted last week by the local branch of the Metal Trades Association. The Moran Bros. Company are also running with nonunion labor, and within a short time all the other plants expect to open.

The Wilmot & Hobbs Mfg. Company.—In referring to the situation at Bridgeport, Conn., in the issue of *The Iron Age*, June 27, the remarks of C. D. S. Miller, the second vice-president of the Wilmot & Hobbs Mfg. Company, were misunderstood by our representative. The impression was conveyed that the company were not endeavoring to increase their orders until the settlement of the trouble. Mr. Miller qualified this in one very important particular. The company were not taking new orders in which, as a part of the contract, machine and tool making are a feature and in which they might be compelled to produce new machines or tools. They are, however, taking care, just as usual, of their regular business and contracts in the iron manufacturing department as well as their steel department, and are just as free to take orders as they ever were, where the tool making and machinists' work is not a feature.

The American Sheet Steel Company have at the present time 21 sheet mills in the Vandergrift Works, at Vandergrift, Pa.; ten mills in the Leechburg Works, at Leechburg, Pa.; four mills at the Saltsburg Works, at Saltsburg, Pa., and six mills in the Apollo Works, at Apollo Pa. It is the intention to add eight more mills to the Vandergrift Works, making that a 29-mill plant. All these mills are in charge of E. W. Pargny, who is manager for the Pittsburgh district for the American Sheet Steel Company. The equipment at the Leechburg Works has been very much improved, and has been brought up to the best possible sheet practice. The equipment at the above four works is kept in the best possible condition by a large force of millwrights and machinists, that a shut down in the summer for repairs is not necessary. At these works the Amalgamated scale is not signed, and the mills are all in full operation, despite reports to the contrary.

Iron and Industrial Stocks.

The stock market has been rather quiet during the week under review. The long expected dividend announcement of the United States Steel Corporation was rather a disappointment because the declaration of 1 per cent. on the common stock was not coupled with any intimation as to whether it is likely to be quarterly or not.

At the meeting of the directors of the American Car & Foundry Company the position of chairman of the board was abolished. An Executive Committee was created, consisting of William McMillan, chairman; W. K. Bixby, vice-chairman, and Frederick H. Eaton, president. The Executive Committee was charged with the control over and general supervision of the policy and business interests of the company and all of their affairs. The following officers were elected: Chairman of the Executive Committee, William McMillan; vice-chairman, W. K. Bixby; president, Frederick H. Eaton; assistant to president, W. H. Woodin; first vice-president and general manager, W. J. McBride; second vice-president, W. P. Coleman; third vice-president, E. F. Carry; fourth vice-president, George Hargreaves; treasurer, S. S. De Lano; secretary, F. F. Webber; auditor, J. M. Bulck; first assistant treasurer, W. S. Avis; second assistant treasurer and assistant secretary, William M. Hager; assistant secretary, D. A. Bixby, assistant for M. A. Doyle.

Dividends.—The American Car & Foundry Company have declared the regular quarterly dividends of 1¼ per cent. on their preferred and ½ per cent. on their common stock, payable August 1. Books close July 10 and reopen August 2.

The directors of the Westinghouse Machine Company, in Pittsburgh, have declared the regular quarterly dividends of 1½ per cent. of the common and preferred stocks, payable June 10.

The United States Steel Corporation have declared a dividend of 1¼ per cent. on their preferred stock, payable Aug. 7, and a dividend of 1 per cent. on their common stock, payable September 14. Books for the preferred dividend close July 16 and reopen August 8, and for the common dividend books close August 20 and reopen September 16.

The Cuyahoga Steel & Wire Company.—The interests of the E. A. Henry Wire Company, the Cuyahoga Iron & Steel Company and the Summit Wire Company, all of Cuyahoga Falls, Ohio, have been consolidated in one concern, to be known as the Cuyahoga Iron & Steel Company, who have been granted a New Jersey charter. The stockholders in these three concerns were identically the same and felt it would be an advantage to have one company, and in this way reduce expenses. The Cuyahoga Steel & Wire Company are now equipped to make wire rods, annealed and galvanized fence wire, bright, coppered and tinned market wire, tinned mattress and broom wire, tinned bookbinders' wire up to No. 33, also wire nails. The officers are E. A. Henry, president; S. H. Miller, vice-president; H. B. Hamlen, treasurer; F. J. Miller, secretary, and H. B. A. Keiser of Pittsburgh, chairman of the Board of Directors and manager.

The National Steel Company.—Under date of July 1 the National Steel Company, W. H. Baldwin, secretary, have sent out notices to the trade to the effect that the offices of the National Steel Company would be removed to Pittsburgh as soon as proper arrangements can be made. In accordance with this decision it has been arranged that the sales department, order department and accounting department will leave New York Friday, July 5, resuming work in Pittsburgh on Monday, July 8. All orders and all correspondence intended for these departments should be mailed to the National Steel Company, Carnegie Block, Pittsburgh. Correspondence for any other department should be sent to the National Steel Company, Battery Park Building, New York City, as heretofore, until further notice.

The Canadian Niagara Power Company.

The Canadian Niagara Power Company have commenced the task of developing the power of Niagara Falls on the Canadian side. This will be done by means of an inlet canal, a wheel pit and a tailrace tunnel on lines somewhat similar to the extensive development on the American side at Niagara. The contract has been awarded to Anthony C. Douglass, and the work of sinking the first shaft has been begun. The first installation of the works of the company will comprise a tunnel of 100,000 horse-power capacity, an inlet canal, and a wheel pit, the latter of 50,000 horse-power capacity, together with the necessary electrical and hydraulic machinery to produce 25,000 horse-power.

The first section of wheel pit to be excavated on the Canadian side will be about 250 feet long and 200 feet in depth. The length of the Canadian tunnel will be about 2200 feet, as compared with a tunnel length on the American Side of 7000 feet. The Canadian tunnel will be built in the form of a horseshoe, the same as on the New York side, but the section will be larger. Its minimum capacity will be 100,000 horse-power, and it will be lined with brick throughout, as will also the wheel pit.

A supplemental agreement has been entered into by the Canadian Niagara Power Company whereby the power company have agreed to expend the sum of \$1,500,000 within two years, the fact being that they are prepared to spend this amount much sooner if it is possible. For many years the opponents of the Ross government have antagonized the Canadian Niagara power development to that extent that American capital was rendered timid about investing in a project where certain forces in politics were continually calling for a forfeiture of the franchise rights. Now, however, the skies seem clear, and the work will go forward with all possible speed. Prospects are that within two years there will be a splendid power development in operation on the Canadian side at the Falls, ready to supply electric power to Hamilton, Toronto and other places.

All of the power developed on the Canadian side must be used outside of the boundaries of Queen Victoria Park, and for this reason the development will aid in rendering the large tracts of vacant land about the Falls on the Canadian side of increased value. However, there has been no marked boom yet, the residents of the locality profiting by what they have seen occur on the New York side, which has taught them that growth as a result of a power development is necessarily very slow.

New officers of the Canadian Niagara Power Company are as follows: President, William H. Beatty; vice-president and treasurer, William B. Rankine; secretary, A. Monro Grier; assistant secretary and assistant treasurer, W. Paxton Little; executive committee, William B. Rankine, William H. Beatty and Wallace Nesbitt.

The Parkersburg Iron & Steel Company.

The Parkersburg Iron & Steel Company, whose general offices are in the *Times* Building, Pittsburgh, are making good progress in the work of erection of their four-mill sheet plant, at Parkersburg, W. Va., and expect to have it in operation in September or October. The main building is 120 feet wide by 450 feet long, which will accommodate a 12-mill plant, the concern expecting to increase to that number of mills in the near future. The four mills will be driven by a 32 and 58 by 60 cross compound Corliss engine, furnished by the Bass Foundry & Machine Company of Ft. Wayne, Ind. The firm are also installing four Wood direct fire 250 horse-power boilers and one Cahall 250 horse-power waste heat boiler. There is already in operation at the plant a Skinner engine and Bullock dynamo of 100 kw. capacity, which operates a Pawling & Harnischfeger electrical traveling crane. This dynamo also furnishes the motor power and light necessary for the operation of the plant. The boilers are to be shipped this week, and the high pressure cylinder for the engine is on the way, as well as the four mills. In addition to the main building there is a bar mill building 63 x 100 feet and

a boiler house 63 x 90 feet. The firm will install a bar mill and roll their own sheet bars. The plant will be equipped with entirely new machinery with very few exceptions, and labor saving machinery throughout, and is expected to be a modern up to date sheet plant. The initial capacity will be from 12,000 to 15,000 tons per annum and the product will consist of the finer grades of sheet iron for stamping purposes and specialties.

MANUFACTURING.

Iron and Steel.

The new plant of the Carnegie Tube Company, now being built at Carnegie, a suburb of Pittsburgh, will be modern in equipment throughout. The buildings will be of steel frame construction, and were designed and will be erected by William B. Scalf & Sons of Pittsburgh.

The Riter-Conley Mfg. Company of Pittsburgh have the contract for the steel buildings, to contain new skelp and tube mills, now being built by the Wheeling Steel & Iron Company at Wheeling, W. Va.

R. S. Henderson, trustee of the Continental Iron Company, has received permission to operate the Wheatland rolling mill until July 1, 1902.

Roane Iron Company, Rockwood, Tenn., have let the contract to J. C. Monday & Co. for the erection of 75 coke ovens and retaining walls, to cost about \$10,000. When this contract has been completed the company will build 75 more ovens and the same firm will get the contract for them.

At a recent meeting of the directors of the stockholders of the Youngstown Iron Sheet & Tube Company, Youngstown, Ohio, the officers were instructed to take the necessary steps to increase the capital of the concern from \$1,000,000 to \$2,000,000, having in view the necessity for enlarging the present plant of this concern, which is now being built. While it may be necessary a little later to erect a steel plant, yet this concern do not expect to do so at once, and will not, unless necessary to provide themselves with rod material. Contracts for the building of the works of this concern have about all been placed and the work of construction is being pushed as fast as possible. The initial plant will consist of puddling, muck bar, skelp, tube and sheet mills. The concern propose to make iron tubes and iron sheets exclusively, and will do their own puddling. They expect to be in the market late in the year with their product.

The Empire Steel & Iron Company, Catsauqua, Pa., are relining two of their furnaces and renewing the hot blast stoves, with the view of increasing the capacity of No. 1 Furnace, which is expected to be put in in the fall.

The Mattie Furnace of the Girard Iron Company, Girard, Ohio, was blown out June 7.

The Everett Furnace of the Everett Furnace Company, Everett, Pa., will probably blow in about July 25.

The Sharon Steel Company, Sharon, Pa., have decided to add four more 50-ton basic open hearth steel furnaces, making 12 in all of this capacity. A large metal mixer will also be added, the intention being to use molten metal in the open hearth, direct from the blast furnace. A large number of by-product coke ovens will also be built, it being the intention of the concern to make their own coke. As high as \$220 a share has been bid on the Pittsburgh Stock Exchange for stock of this concern, the par value being \$100 a share.

The Colonial Steel Company of Pittsburgh, who will build a large open hearth and crucible steel plant at Monaca, Pa., have already placed a number of their contracts. As before stated, the company have given the contract for the buildings to William B. Scalf & Sons, Pittsburgh, and have just placed an order for 2012 horse-power Babcock & Wilcox Company boilers. Also an order for 500 horse-power Cahall waste heat boilers. The firm have also given a contract to Robert A. Bole, manager Pittsburgh office of Manning, Maxwell & Moore, for ten steam hammers.

The Wheeling Steel & Iron Company of Wheeling, W. Va., have signed the Amalgamated Association scale.

The Everson Steel Company have been incorporated at Charleston, W. Va., with a reported capital of \$3,000,000.

A move is under way in Pittsburgh to consolidate some of the forge concerns in that city into one company. Should the deal go through it is probable the Duquesne Forge Company, at Braddock, and the forge department of the Pittsburgh Forge & Iron Company, in Allegheny, will be included in the consolidation.

All the puddling and bar iron mills of the Republic Iron & Steel Company in the West and South are idle this week, undergoing necessary repairs and taking inventory. It is expected, however, that all the plants now idle will resume operations on Monday, July 8. The Republic Iron & Steel Company have a very large tonnage of orders on their books, and desire to get their plants started at the very earliest moment.

General Machinery.

The Westinghouse Electric & Mfg. Company of Pittsburgh have shipped to Chicago an automobile of novel construction. It is equipped with storage batteries, but the fact that in each of the four hubs is a motor makes it different from other autos. The hubs are enlarged to about 15 inches in diameter and lengthened to about 20 inches. The body of the car resembles the old-fashioned double-decker street car, having seats lengthwise in the inside and two long seats back to back on top. It will carry 50 people, and will be used in Lincoln Park, Chicago. It is understood that a number more will be constructed.

The Union Foundry & Machine Company, Catasauqua, Pa., are building an addition to their plant, 105 x 100 feet, which they expect to occupy about the middle of July. It will be fitted with electric crane and improved core ovens to secure quickest dispatch in filling of orders.

The Williams Foundry & Machine Company, Akron, Ohio, have incorporated with a capital stock of \$5000, for the manufacture of rubber works machinery, bicycle and vehicle tire molds, vertical and horizontal tire machines and pottery machinery. A general foundry, pattern and machine business will also be carried on. The company will occupy the plant formerly used by J. K. Williams and will build additions to it as business increases. The pattern department will be under the management of A. J. White, formerly in charge of the pattern and foundry department of the Webster, Camp & Lane Company. The officers and directors are J. K. Williams, president; A. J. White, treasurer; Robert E. Patterson, secretary; D. P. Wheeler and Harvey Musser.

The Webster, Camp & Lane Company of Akron have awarded a contract to Charles Henry & Sons of that city for the erection of a large plant at East Akron. The Webster, Camp & Lane Company have recently reorganized under increased capital, and their business is to be extended in new lines. A meeting of the company will be held in a few days, when a new Board of Directors will be elected.

The Cleveland Crane & Car Company of Cleveland are enjoying an active summer. They are at work on the following contracts for cranes: One 40-ton two-trolley type hand power crane, for the National Cash Register Company of Dayton; one 10-ton three-motor electric traveling crane, for the Pennsylvania Steel Company, Steelton, Pa.; one 5-ton three-motor electric traveling crane, for the Allegheny Plate Glass Company of Hite, Pa.; one 10-ton three-motor electric traveling crane, for the St. Louis Foundry & Machine Company, St. Louis, Mo. They have also a number of orders for electric hoists to be delivered in the near future.

Harman & Hassert, Bloomsburg, Pa., are adding a 7-ton cupola and putting in a traveling crane that will enable them to utilize about 1000 square feet more of their foundry space than before its introduction. They have also put in an additional engine of 50 horse-power. They have contracted to supply the columns and castings required in the addition being made to the Connell buildings, Scranton, Pa. The works are running full and overtime.

The Richard Mfg. Company, Bloomsburg, Pa., are running time and half. Their lines are all made up of special machinery manufacturing in sheet metal and wire. They have several large United States Government contracts which, with other work in hand, they expect will keep them fully engaged to the end of the year.

The Potter Mfg. Company, Indianapolis, Ind., manufacturers of trench machines, sewer braces, steel buckets, and general contractors' supplies, who were established in 1896, have incorporated for the purpose of enlarging their former business. The officers are J. L. Potter, president and general manager; Henry B. Martin, vice-president, and H. G. Hawekotte, secretary and treasurer.

The Friction Pulley & Machine Works, Sandy Hill, N. Y., manufacturers of Noiseless Success screen, patent friction pulleys, cut off couplings and special pulp and paper mill machinery, have secured an order amounting to considerably more than \$30,000, for a 60-ton pulp mill, which includes 12 pulp grinders, 14 wet machines, 16 screens, 6 barkers, cutting up rig and splitter, to go to Buckingham, P. Q. The Watrous Engine Works Company, Limited, Brantford, Ontario, a concern with whom the Friction Pulley & Machine Works are connected, will manufacture the machinery to save duty. The pumps, shafting and pulleys have not yet been purchased.

The Dempster Mill Mfg. Company, Beatrice, Neb., manufacturers of windmills, pumps, tanks, &c., are enlarging their plant by building additions to the machine shop and foundry, and by the erection of a new complete galvanizing plant for galvanizing windmills and windmill material. The cost of the additions, with the new machinery which will be installed, will be about \$20,000, and the capacity of the machine shop and foundry will be increased about one-third.

J. B. Warren and D. F. Smith, under the firm name of Warren & Smith, machinists and engineers, have recently opened a machine shop at Fairhaven, Wash. The firm will make a specialty of saw mill and shingle mill machinery and will also do cannery work.

F. T. Locke, manager of Ticonderoga Machine Works, Ticon-

deroga, N. Y., has recently closed an order for 25 pneumatic ore separators for the General Concentrate Company of New York City.

The Neperhan Machine Company, recently incorporated, to manufacture patented machines for making envelopes, and to do experimental and repair work, have secured the plant formerly operated by Stephen H. Perrett, at Yonkers, N. Y., which they will put in operation as soon as the necessary repairs can be made. J. S. Gledhill is one of the principal organizers.

The Boston Engineering Company wish to announce that they have established a fully equipped machine shop, also a brass finishing department for all kinds of water work, engines, boilers, pumps, &c., at 25 India Wharf, Boston, Mass., with A. F. Bremner manager.

The William Tod Company of Youngstown, Ohio, have received an order from the Carnegie Steel Company, Pittsburgh, for a large engine, which will be used to drive the Edgar Thomson rail mills, at Bessemer. The engine is of entirely new design, and will have horizontal high pressure cylinder, 30 inches in diameter, with 48-inch stroke, and vertical low pressure cylinder, 54 inches in diameter, with 48-inch stroke. Both connecting rods are to be attached to the same crank pin, and there will be a piston valve movement throughout.

Engines and Boilers.

The Quincy Engine Works, Quincy, Ill., have broken ground for the erection of their buildings. The plant will be located in the northwestern part of the city on a spur of the Chicago, Burlington & Quincy Railroad, which will also be used by several other new manufacturing establishments. The contracts for the machinery have been placed with the stipulation that deliveries are to be made by October. It is expected that the plant will be in operation before the close of the year. They will manufacture an engine specially designed by J. B. Williams, formerly engineer of the Lake Erie Engineering Works. They will at first build vertical compound engines up to 2500 horse-power, specially intended for electrical work. They will later engage in the manufacture of Corliss engines.

The Richmond Locomotive Works, Richmond, Va., are erecting a new electrical power house at a cost of \$21,000. This power house will be equipped with machinery to enable them to use the electric current now being generated by water power from the James River, by the Virginia Electrical Railway & Development Company.

The Meriam-Abbott Electric Company have recently been organized in Cleveland and have commenced work on a new factory building on East Prospect street, that city. They will manufacture motors and gas engines and will install considerable new machinery.

The J. C. McNeil Boiler Company of Akron have been awarded a contract for the boilers for a large straw board plant to be erected by an independent company in Indiana. They are working on a large battery of boilers for the People's Hard Rubber Company, who are building a plant near Akron.

Buildings and Bridges.

The American Bridge Company have taken a contract for the building of a bridge at Lisbon Works of the American Tin Plate Company, at Lisbon, Ohio, and also for a bridge of the Pittsburgh & Western Railroad, at Warren, Ohio. All this work will be turned out at the Youngstown works of the American Bridge Company, and which are followed up with contracts for several months.

The New England Structural Company of Boston have been awarded the contract for furnishing the steel frame work and ornamental iron work for the New England Real Estate Trust Building on Boylston street, Boston.

President W. T. Stilwell of the Structural Iron & Steel Company of Baltimore, Md., and the other officers of that corporation, were re-elected at the annual meeting, held July 1.

Foundries.

In these columns, June 20, mistake was made in the weight of the large fly wheel recently cast by the Hoefinghauff & Lane Foundry Company of Cincinnati. It should have read 70,000 pounds and not 17,000 pounds.

The Reading Foundry Company, recently incorporated, have acquired the works and business of the Reading Foundry Company, Limited, at Reading, Pa., and are now prepared to make estimates on cast iron pipe, bell and spigot or flanged, for gas, water, steam, &c., of all sizes in general use; special castings and fittings, stop valves, fire hydrants, turbines, general castings, machinery, &c. The officers and directors are F. W. Ayer, president; P. D. Wanner, vice-president; J. W. Storb, treasurer; F. A. McDermond, secretary; J. J. Mohr, Robert E. Brooke, Isaac Eckert and A. H. Mellert.

Machine Tools.

The Standard Pneumatic Tool Company, Chicago, manufacturers of the Little Giant pneumatic tools, have opened an office at 423 Emma Spreckels Building, San Francisco, Cal. Jas. H. Manning has been appointed Western manager.

The Danielson Machine & Tool Company of Cleveland have sold their machine tool business to the S. M. York Machinery Company of that city. Hereafter the Danielson Company will

confine themselves to the manufacture of dies and presses. They are preparing to enlarge their plant and equipment and will increase the capacity about 20 per cent.

Hardware.

W. H. Bautell & Co., manufacturers of apple parers, are having plans prepared for a new machine shop, to be erected on Lois and Rutter streets, Rochester, N. Y. The building will be of brick, 33 x 104 feet, and will cost about \$8000. A detached building, 24 x 24 feet, will also be put up for the boilers and engines.

The Foran Foundry & Mfg. Company, Flemington, N. J., were established eight years ago. Up to within three years their principal manufacture was plumbers' supplies, stable fittings and anything in the line of light fittings. Since then the shops have been rebuilt and enlarged and equipped to do heavier work. The staple manufacture is engine and pump work, general heavy machinery and jobbing. The capacity of the works is about 50 tons per day. The company have a standing contract with the American Engine Company, Bound Brook, N. J., to do all their casting work. They also do the whole of the cast iron work required by the New York Rapid Transit Company. The works have never been shut down since started, except for ordinary repairs.

The Bryden Horse Shoe Company, Catasauqua, Pa., with their increasing business have found the floor space on which the shoes are formed and finished too small and likewise uncomfortable for their workmen. In order to improve these conditions and increase their output, they have erected another building immediately adjacent to the old one, doubling the floor space, the addition being used for cooling and inspecting. Trade with the company is very satisfactory.

The Emmert Mfg. Company, Waynesboro, Pa., began manufacturing their universal pattern makers' vise on April 1. The special feature of the vise is that the workman can throw the work of the vise in any position as best suits his comfort. The company report an excellent demand for the vise; in fact, it is just now beyond their capacity to supply.

Williamsport Staple Company, Williamsport, Pa., are building an addition to their factory, 108 x 60 and three stories high, which will increase their present capacity about one-third in the manufacture of curry combs, Plow Boy back band hooks and leather goods.

Miscellaneous.

The Hecla Coke Company of Pittsburgh have plans prepared for the erection of an additional plant of 300 ovens in the Connellsville region. The new works are to join the No. 1 plant, and will be modern in equipment and construction.

The Heany Company, galvanizers of iron, 46 and 48 North Morgan street, Chicago, have just completed the erection of a new brick building 40 x 100 feet. This will be used as a galvanizing plant and will materially increase the capacity of the works.

William B. Scalfe & Sons of Pittsburgh, manufacturers of structural iron work, pressure tanks, galvanized ice cans, sheet plate and forged iron work, have secured a contract from the Mexican Central Railroad for a large galvanized cylinder, on which a steel frame pier is to rest. The contract necessitates an enlargement of the galvanizing plant of William B. Scalfe & Sons. These cylinders, which are to be galvanized and then riveted together, are 6 feet in diameter, made of $\frac{3}{8}$ -inch thick steel, each weighing about 2800 pounds. They are to act as piers, and when put in place will be filled with concrete. They are the largest cylinders that have ever been galvanized in this country, and it is doubtful if anything as large has ever been galvanized elsewhere. This firm did similar work for the Port Royal Navy Yard Wharf last year, but the cylinders were only $4\frac{1}{2}$ feet in diameter, made of $\frac{3}{8}$ -inch, and weighed 1100 pounds each.

The Bloomsburg Car Mfg. Company, Bloomsburg, Pa., state that they are now full of work, which has been their situation more or less for the last four years.

The Toledo Metal Wheel Company, Toledo, Ohio, manufacturers of juvenile bicycles, tricycles, steel sleds, wire wheels, &c., are building an addition, 150 x 75 feet, of brick, four and one-half stories high, to their plant at Auburndale.

The Bestosking Packing & Supply Company, dealers in asbestos goods of all kinds, have opened an office at 170 Summer street, Boston. This concern are the sole United States agents for Turner Bros., Limited, of Rochdale, England, makers of the original and famous Dagger packing.

The Superior Mfg. Company of Allegheny, Pa., have applied for a charter. The company, who have a capital stock of \$25,000, propose to go into the manufacture of gas logs and asbestos and sheet steel burners for the burning of gas for domestic and manufacturing purposes. The concern have for some time been operating a small factory on Sherman avenue, but are now ready to move into their new quarters, a three-story factory, fronting 1800 feet on the Pennsylvania lines, at the corner of Said and Magnolia streets, Allegheny. Those interested in the new company are W. T. Bradberry, formerly of the Anschutz-Bradberry Company and later vice-president of the Pittsburgh Stove & Range Company; William H. Collingwood and Thomas M.

Dudgeon, formerly with Bissell & Co., and Robert A. Bradford. The new plant will employ about 50 men.

The Champion Blower & Forge Company, Lancaster, Pa., are making further improvements to their plant. Extensive alterations and additions were made early in the year, but proved inadequate for their extensive business. They are now enlarging both the foundry and machine shop and installing considerable new machinery, which will increase their present capacity fully one-third. Heavy shipments of forges and blowers are being made to all points, both foreign and domestic. One recent shipment included 100 steel blacksmiths' forges for export to Singapore.

The Ironsides Company, Columbus, Ohio, report among other large users of their materials the United States Government, who, after thorough tests demonstrating protection from corrosive effects of salt water, now incorporate Ironsides wire rope filled in all the wire rope hawsers for the navy.

The old Cold Spring Iron property, near Otis, was recently sold to W. H. Hawley of West Otis, Mass., for \$1000.

The Van Dorn Iron Works Company of Cleveland have received an order from the city of Manila for 250 iron lawn seats. They are also at work on the following contracts: Two carloads of ornamental iron work for the Vivac City Jail, Havana, Cuba; jail equipment for a new jail in Wyoming County, New York, amounting to \$25,000; an extension to the Chautauqua County Jail, Chautauqua, N. Y.; 96 cells for the Connecticut State Prison; equipment for the Norfolk City Jail, Norfolk, Va.

The Dithridge Steel Car Company, a new corporation who are to build a \$1,000,000 plant for the manufacture of steel cars, have their engineers at work laying out the new town of East Newcomertown, Ohio, where their works will be located. As soon as the engineers are through with the topographical survey they will begin surveying the sites for the works, and to design the buildings and select the requisite machinery.

The Cramp Steel Company, Limited.

The Cramp Steel Company, Limited, are calling for subscriptions to one issue of \$1,000,000 7 per cent. cumulative preferred stock, the entire capital being \$2,000,000 of preferred stock and \$3,000,000 of common stock. Subscribers to the preferred receive as a bonus one share of common stock, payments to be made 25 per cent. on application, 25 per cent. on August 1 and 50 per cent. on September 1. The proceeds of the sale of the preferred stock are to be used to build a blast furnace and an open hearth steel plant at Collingwood, Ontario, the town having granted a cash bonus of \$115,000 and 80 acres of land. The company own iron lands in Ontario which are said to carry Bessemer ore and own coal mines in Wise and Dickenson counties, Virginia, which have been reported on by A. S. McCreath of Harrisburg, Pa.; E. V. D'Invilliers of Philadelphia, and P. L. McCully of Pittsburgh. It is estimated that the bounties during their existence will aggregate \$1,755,000. The Board of Directors includes William M. Cramp of Philadelphia, Dr. W. Seward Webb, Chas. D. Cramp, Col. A. B. Chandler, H. L. Burrage, J. Wesley Allison, Sir Charles Tupper and J. A. Currie.

Large Orders for Boilers.—The Pittsburgh office of the Babcock & Wilcox Company, in the Empire Building, have taken a large contract from the St. Clair Furnace Company of the Crucible Steel Company of America for 12,000 horse-power Babcock & Wilcox Company boilers. Recently the same office received a contract from the National Steel Company for 5089 horse-power Babcock & Wilcox Company boilers, equipped with Babcock & Wilcox chainless grate stokers. These boilers are for shipment to New Castle, Pa.

The Brier Hill Coke Company.—Some time since the Brier Hill Iron & Coal Company, operating blast furnaces at Youngstown, Ohio, bought a large acreage of coal lands in the Klondike district of the Connellsville region. Recently the company organized, at Uniontown, Pa., under the Pennsylvania laws, a new company, called the Brier Hill Coke Company. The officials are: George Tod, president; J. G. Butler, Jr., vice-president, and H. H. Stambaugh, secretary and treasurer. It is not likely, however, that the new concern will do anything this year in the way of building coke ovens. It is the ultimate intention to build a sufficient number of ovens of the beehive type to make coke for the furnaces at Youngstown.

The Iron and Metal Trades.

Interest naturally centers on the labor situation. The issue has been made between the Amalgamated Association and the American Sheet Steel and the American Steel Hoop companies, both constituent companies of the United States Steel Corporation. Of the mills of both of these companies a certain number, including very important plants, have for many years been non-union mills, which, however, generally pay union wages. Both companies have been willing to sign the scale for the union mills, but declined to do so for the non-union mills, which was demanded by the Amalgamated Association.

From Pittsburgh comes the very significant news that the nonunion mills in both companies in that district are running to-day, thus proving that the Amalgamated Association has not even succeeded in organizing these plants. This makes the talk seem rash that the men in some of the great plants of the United States Steel Corporation may be called out.

So far as the Bar product of the American Steel Hoop Company is concerned other companies in the group may be able to take care of it. In the Sheet branch some of the most important mills are running. Still the product tonnage must be seriously affected by the shutting down of the union mills. Since it has been stated all along that the works were crowded and were behind their deliveries the sudden announcement of a reduction in the price of Sheets is certainly puzzling. It cannot have been done to stimulate trade.

Any prolonged strike or any important extension of it to mills now nonunion would, of course, adversely affect the Pig Iron industry to some extent. It would, however, take the form of restricting the purchases of the United States Steel Corporation, since they would practically be the only concern affected.

The Pig Iron market has been quiet in all the leading distributing centers. Some of the heavy consumers, notably the Pipe consolidation, have been feeling it, but have not made any purchases of consequence.

Steel has been very quiet. We understand that contracts are being offered by a leading interest based on a Pig Iron sliding scale, starting with \$8 Pig and ascending to \$17 Pig. At the range of \$16 to \$17 the price of Billets is \$6.50 above the price of Pig.

Quite a considerable number of lake vessels has been contracted for and the Plates and Shapes for them have been purchased, the tonnage being fairly large.

In the East the makers of Bars have got close together and are now quoting uniformly. In a similar way the makers of Track Bolts have agreed upon 2.65c., at mill, as the minimum.

Old Material, so sensitive to all changes, has been displaying a weakening tendency lately, and, with a very indifferent attitude on the part of buyers, prices have been receding.

European makers are hunting for business very closely, and the serious position of affairs in Germany makes it probable that pressure from that quarter will continue severe for some time to come. We understand that the Canadian market is hotly and successfully contested, and that orders, small though they be, for Steel Billets and for Wire Rods for re-export have been taken in this country.

The interesting announcement is made that the Tennessee Company will not make any effort to complete the Steel Rail and Tin Plate Bar mills this year, since all energies are to be bent toward getting the Steel mill down to a regular, efficient and cheaply working basis.

A Comparison of Prices.

At date, one week, one month and one year previous.

Advances Over the Previous Month in Heavy Type. Declines in Italics.

	July 3, 1901.	June 30, 1901.	June 5, 1901.	July 5, 1900.
PIG IRON:				
Foundry Pig, No. 2, Standard, Philadelphia	\$15.00	\$15.00	\$15.00	\$17.00
Foundry Pig, No. 2, Southern, Cincinnati	13.00	13.00	13.50	17.75
Foundry Pig, No. 2, Local, Chicago	15.00	15.00	15.00	19.00
Bessemer Pig, Pittsburgh	16.00	16.00	16.00	18.00
Gray Forge, Pittsburgh	13.75	14.00	14.25	16.50
Lake Superior Charcoal, Chicago ..	17.00	17.00	17.00	22.00
BILLETS, RAILS, ETC.:				
Steel Billets, Pittsburgh (nom)....	24.00	24.00	24.00	25.00
Steel Billets, Philadelphia (nom)...	26.75	26.75	26.25	27.50
Steel Billets, Chicago, (nom).....	.....	.....	.....	.....
Wire Rods (delivered).....	39.00	39.00	39.00	35.00
Steel Rails, Heavy, Eastern Mill..	28.00	28.00	28.00	35.00
Spikes, Tidewater.	1.80	1.80	1.80	2.15
Splice Bars, Tidewater.....	1.45	1.40	1.40	2.00

OLD MATERIAL:

O. Steel Rails, Chicago, gross ton.	13.00	13.00	13.00	11.00
O. Steel Rails, Philadelphia	<i>14.50</i>	15.00	16.00	nom.
O. Iron Rails, Chicago, gross ton .	18.50	18.50	18.50	14.00
O. Iron Rails, Philadelphia	19.00	19.00	19.50	nom.
O. Car Wheels, Chicago, gross ton.	16.50	16.50	16.50	18.00
O. Car Wheels, Philadelphia	17.50	17.50	17.50	nom.
Heavy Steel Scrap, Chicago, g. ton	13.00	13.00	13.00	10.00

FINISHED IRON AND STEEL:

Refined Iron Bars, Philadelphia...	1.55	1.55	1.55	1.50
Common Iron Bars, Chicago.	1.55	1.55	1.55	1.55
Common Iron Bars, Youngstown.	<i>1.60</i>	1.45	1.45	1.40
Steel Bars, Tidewater.....	1.60	1.60	1.63 $\frac{1}{4}$	1.50
Steel Bars, Pittsburgh	1.40	1.40	1.40	1.35
Tank Plates, Tidewater.....	1.75	1.75	1.75	1.45
Tank Plates, Pittsburgh.....	1.60	1.60	1.60	1.35
Beams, Tidewater.....	1.75	1.75	1.75	1.65
Beams, Pittsburgh	1.60	1.60	1.60	1.90
Angles, Tidewater	1.75	1.75	1.75	1.95
Angles, Pittsburgh.....	1.60	1.60	1.60	1.80
Skelp, Grooved Iron, Pittsburgh..	1.82$\frac{1}{4}$	1.82 $\frac{1}{4}$	1.80	1.40
Skelp, Sheared Iron, Pittsburgh ..	1.90	1.90	1.85	1.45
Sheets, No. 27, Pittsburgh.....	2.90	3.20	3.20	2.90
Barb Wire, f.o.b. Pittsburgh.....	2.90	2.90	2.90	2.80
Wire Nails, f.o.b. Pittsburgh.....	2.30	2.30	2.30	2.20
Cut Nails, Mill.....	2.00	2.00	2.00	2.05

METALS:

Copper, New York.....	17.00	17.00	17.00	16.25
Spelter, St. Louis ..	3.82$\frac{1}{4}$	.....	3.77 $\frac{1}{4}$	4.10
Lead, New York.....	4.37 $\frac{1}{4}$	4.37 $\frac{1}{4}$	4.37 $\frac{1}{4}$	4.12 $\frac{1}{4}$
Lead, St. Louis.....	4.35	.....	4.30	4.07 $\frac{1}{4}$
Tin, New York	28.50	28.25	27.85	31.30
Antimony, Hallett, New York ...	8.75	8.75	8.75	9.63 $\frac{1}{4}$
Nickel, New York.....	60.00	60.00	60.00	55.00
Tin Plate, Domestic Bessemer, 100 lbs., New York.....	4.19	4.19	4.19	4.84

Chicago.

1205 FISHER BUILDING, July 3, 1901.—(By Telegraph.)

Interest has centered this week in the various labor negotiations and strikes. The latter have been aggravated, it is believed, by the extreme weather, which has made the men indifferent to work. A few of the Western foundries are shut down, reports that the molders might be called out this week having been circulated, and the foundrymen preferring to clean up the work in the shops rather than have unfinished work left on their hands. The strike in the Sheet mills also has had a quieting effect. Most Iron rolling mills are closed this week, but it is said that all the plants of the Republic Iron & Steel Company will start up next Monday. The above uncertainties, in conjunction with the hot weather and the holiday, have made the past week one considerably lighter in volume of business than any of its predecessors for some time past. Still trade is by no means dull, and in spots there is positive briskness of demand. For Iron Bars the inquiry has been very large, the purchases being usually for an extended period ahead. There are some indications that the inquiry is stimulated by a supposed scarcity in Steel product. Specifications are larger for Plates. Prices are generally steady. The adjustment of Sheet prices July 1 with other products by a reduction on some of the heavier sizes has occasioned some temporary hesitation, which is removed when the

facts become known. On the whole, there is a fair amount of business, tempered by the conditions named above.

Pig Iron.—What has become of the many inquiries for Pig Iron which appeared several weeks ago is not clear. Possibly some of them have eventuated in transactions unknown to the trade in general, but the great majority have perhaps retired until the market conditions have become more settled. There has been so much uncertainty ahead regarding the continuance of steady operations that some melters have not only withdrawn from the market, but have temporarily closed their foundries until the question of wages has been determined. There remains considerable Iron to be bought for needs during the ensuing six months. Trading during the past week has been fairly good. Some of the orders were for deliveries during the last quarter of the year. Prices are without material change. The local Irons are strong, and some of the Southern producers are said to be firmer in tone, but there is still reported a shading of quotations by other Southern producers. We quote as follows:

Lake Superior Charcoal.....	\$17.00 to \$18.00
Local Coke Foundry, No. 1.....	15.50 to 16.00
Local Coke Foundry, No. 2.....	15.00 to 15.50
Local Coke Foundry, No. 3.....	14.50 to 15.00
Local Scotch, No. 1.....	15.75 to 16.25
Ohio Strong Softeners, No. 1.....	16.00 to 16.50
Southern Silvery, according to Silicon.....	14.90 to 15.15
Southern Coke, No. 1.....	14.65 to 14.90
Southern Coke, No. 2.....	14.15 to 14.40
Southern Coke, No. 3.....	13.65 to 13.90
Southern Coke, No. 1 Soft.....	14.65 to 14.90
Southern Coke, No. 2 Soft.....	14.15 to 14.40
Foundry Forge.....	13.15 to 13.40
Gray Forge and Mottled.....	12.90 to 13.15
Southern Charcoal Softeners, according to Silicon.....	15.00 to 16.50
Tennessee Silicon Pig.....	16.00 to 17.00
Alabama and Georgia Car Wheel.....	19.90 to 20.50
MaHeable Bessemer.....	16.25 to 16.50
Standard Bessemer.....	17.50 to 18.00
Jackson County and Kentucky Silvery, 8 per cent. Silicon.....	16.50 to 17.00

Bars.—The demand for both Iron and Steel Bars is brisk. Users are asking for tonnage to be required during the coming half year, and the inquiry is shared by all producers. Specifications also are growing. Many mills are falling behind in deliveries, and some of the present buying is supposed to be as a safeguard against postponed shipments on old orders. It is expected that the mills of the Republic Iron & Steel Company will start up next Monday, the condition of order books making this early resumption desirable. Small producers of Iron Bars are selling quite freely, and prices are well maintained. Mill shipments of Common Iron or Soft Steel Bars are quoted at 1.55c., Chicago. Carload lots of Steel Bars are held at 1.60c. to 1.65c., and Hoops at 2c. Jobbers report a steady trade from stock, small lots being held at 1.90c. to 2c. for either Iron or Steel Bars, and 2.20c. to 2.25c., base, for Hoops.

Structural Material.—While large business is still a matter of the future very largely, there is an excellent tonnage moving in lots of 500 tons or less, shipments going to all parts of the West. Prospects are that a little later several additional Chicago buildings will be in the market for tonnage. Mill shipments are quoted as follows: Beams, Channels and Zees, 15 inches and under, 1.75c.; 18 inches and over, 1.85c.; Angies, 1.75c. rates; Tees, 1.80c.; Universal Plates, 1.75c. to 1.85c.; small lots of Beams and Channels from local yards are quoted at 2.25c.; Angles, 2c. rates; Tees, 2.15c.

Plates.—Specification on Plates from store have improved within the past few days, and the present trade is unusually active for July. Mills have an increasing number of inquiries, which are likely to assume definite shape within the near future.

Sheets.—The Sheet trade has been unusually prominent because of the suspension of the union mills. Inquiries have increased, and orders are taken subject to delays from strikes. The stocks in store locally are not large, and while the demands made upon them are in keeping with the conditions prices from store have not advanced. The situation has added interest from the readjustment in the prices made last Monday. While this adjustment of Sheet prices with those of other products has been in the nature of a reduction on mill quotations, that result is said to be only incidental to the main pur-

pose, which is to harmonize the values of the various Steel products. No. 27 Black are strong at 3.40c. to 3.50c. in small lots, and Galvanized at 65 and 10 to 70 off.

Merchant Pipe.—Specifications and shipments continue large, and quotations are unchanged. Manufacturers' prices, random lengths, are as follows:

	In carloads.	Less than carloads.
	Blk. Galvd.	Blk. Galvd.
1/8 to 1/2 inch and 11 to 12 inches.....	59.2	46.2 54.9 40.9
6 inches and larger.....	50 and 5	47 1/2

Boiler Tubes.—There is a good steady demand for Boiler Tubes, and quotations are unchanged. Quotations on less than carloads from jobbers' stocks are as follows:

	Steel.	Iron.
1 to 2 1/2 inches.....	50	40
2 1/2 to 3 inches.....	57 1/2	47 1/2
3 inches and larger.....	60 and 5	47 1/2

Rails and Track Supplies.—Fresh inquiries for Rails this week are comparatively few, the greater activity being for Light Rails. There is, however, quite a tonnage that might be booked if deliveries wanted could be met. Quotations are as follows: Splice Bars, 1.75c. to 1.80c.; Spikes, 1.95c. to 2c.; Track Bolts, with Hexagon Nuts, 2.80c.; with Square Nuts, 2.65c.

Merchant Steel.—Some additional contracts for next season's needs have been closed. Buyers are cheerful over the prospect for business next year, and are ordering in lots as large as the contracts now expiring. Mill shipments, Chicago, are quoted as follows: Smooth Finished Machinery Steel, 2c. to 2.10c.; Smooth Finished Tire, 1.85c. to 2c.; Open Hearth Spring Steel, 2.30c. to 2.40c.; Toe Calk, 2.40c. to 2.60c.; Sleigh Shoe, 1.85c. to 1.90c.; Cutter Shoe, 2.40c. to 2.60c.; Cold Rolled Shafting, 55 off. Ordinary grades of Crucible Tool Steel are quoted at 6 1/2c. for carloads and 7c. to 7 1/2c. from store; Specials, 12c. upward.

Old Material.—For Busheling Scrap there is a good demand, and transactions are fairly large, with prices firm. But for the list generally there is neglect. Mills are taking stock, and dealers generally are content to wait. What little Scrap seeks the market goes at some concession from nominal quotations. The following are approximate quotations per gross ton:

Old Iron Rails.....	\$18.50 to \$18.75
Old Steel Rails, mixed lengths.....	13.00 to 13.50
Old Steel Rails, long lengths.....	15.00 to 15.50
Heavy Relaying Rails.....	21.00 to 22.00
Old Car Wheels.....	16.50 to 17.00
Heavy Melting Steel Scrap.....	13.00 to 13.50
Mixed Steel.....	11.00 to 11.50

The following quotations are per net ton:

Iron Fish Plates.....	\$16.00 to \$16.50
Iron Car Axles.....	18.50 to 19.00
Steel Car Axles.....	15.50 to 16.00
No. 1 Railroad Wrought.....	14.00 to 14.50
No. 2 Railroad Wrought.....	12.00 to 12.50
Shafting.....	15.50 to 16.00
No. 1 Dealers' Forge.....	12.00 to 12.50
No. 1 Busheling and Wrought Pipe.....	10.50 to 11.00
Iron Axle Turnings.....	9.50 to 10.00
Soft Steel Axle Turnings.....	9.00 to 9.50
Machine Shop Turnings.....	8.50 to 9.00
Cast Borings.....	4.25 to 4.50
Mixed Borings, &c.....	4.50 to 5.00
No. 1 Boilers, cut.....	11.50 to 12.00
No. 2 Boilers, cut.....	9.50 to 10.00
Heavy Cast Scrap.....	10.50 to 11.00
Stove Plate and Light Cast Scrap.....	8.00 to 8.50
Railroad Malleable.....	11.50 to 12.00
Agricultural Malleable.....	10.50 to 11.00

Metals.—Copper has sold more freely for deliveries during the next two weeks, with quotations unchanged at 17 1/2c., carloads, for Lake, and 17 1/4c. for Casting Brands. Pig Lead is moving fairly well at 4.32 1/2c. for Desilverized and 4.42 1/2c. for Corroding in 50-ton lots. Dealers quote selling prices on small lots of Old Metals as follows: Copper Wire and Heavy, 15 1/2c.; Copper Bottoms, 14c.; Red Brass, 14 1/2c.; Yellow Brass, 10 1/2c.; Light Brass, 8 1/2c.; Pipe Lead, 4 1/4c.; Zinc, 3 1/4c.

Coke.—A number of contracts for Coke are being closed for six months' shipments and prices are unchanged at \$4.50 to \$5 for 72-hour Foundry Coke.

It is reported that the enameling works at Duquesne, Iowa, have been sold to New York and Chicago capitalists and that manufacturing operations will be conducted on a larger scale than heretofore.

Philadelphia.

FORREST BUILDING, July 2, 1901.

The half year just closed has been as remarkable for its uniformity in prices as it was for the enormous amount of business that was done. The output of Pig Iron tells the whole story. A production which will probably reach a total of 7,750,000 tons during the first six months of the year, and a consumption in excess of that vast tonnage, is something beyond the most optimistic calculations. Moreover, the heaviest end of the business was done during the second quarter, and if it is carried over into the third and fourth quarters of the year, which now seems to be fairly well assured, the total consumption during 1901 will reach 16,000,000 tons, and may go considerably beyond that.

During the entire half year prices of Pig Iron have not varied more than 50c. per ton, making \$15.50 for No. 2 X as an average. The market opened in January with figures slightly higher than those of to-day, but there was a gradual easing off during the first three months, after which there was a recovery by easy stages until the loss was about recovered, and held very firm for four or five weeks, after which there was another sagging off, but which from the top figure to the bottom did not reach more than a difference of 50c., and in some cases not as much as that. The price to-day, however, is about 50c. less than it was on January 1. The production of Pig Iron during the six months showed a steady increase, amounting to at least 60,000 tons per week—that is to say, the capacity of the furnaces in operation was 250,350 tons per week during December and 314,505 tons per week during May. The returns for June are not yet available, but it is not expected that they will materially change the estimate based on the above figures. Under such conditions, and with the present outlook, there does not appear to be anything to cause any appreciable change in prices.

Production and consumption are so evenly balanced that there is no reason for expecting anything but a broad market, with about the same movements in prices as during the six months now ended.

In some respects it might be stated that the position at this time is better than it was at the beginning of the year. At that time there was some doubt in regard to the market being able to stand the threatened increase in production, but these fears were not well founded, as all the Iron that was made has passed into consumption, besides 160,000 tons taken from stocks which were on hand on January 1. Besides this, the question of the new combinations was not entirely satisfactory to a great many in the trade, but so far they appear to have had a good influence, and they are now considered as beneficial rather than antagonistic. The crops are also an important factor in determining the character and the extent of the demand for Iron and Steel. These are now far enough advanced to make it almost certain that the wheat crop will be the largest ever raised, and that prices will surely average satisfactorily. Reports from several other wheat growing countries are very bad, and while it is unfortunate for them, it has to be considered as a measure determining the kind of markets we may expect to have in our own country. Taking all these matters into consideration, it is pretty safe to assume that there will be no falling off in the Iron trade, and that the next six months may prove to be the best that the trade has ever known.

The Finished Material trade has also had a very satisfactory run of business, while the indications for the last half of the year are still more favorable, owing to the adoption of the "community of interest" system. Business during the entire six months has been in large volume, and prices were fairly steady. During the first quarter of the year they were not entirely satisfactory, the raw materials being somewhat out of proportion with prices for the product. This has been overcome to some extent, and as there is absolutely uniform selling prices for Bars, Plates, Structural Material, &c., the outlook for the last half of the year is very promising. The arrangements for the distribution of business have proved so satisfactory that there is no probability of

any change in prices being made, unless it is made openly and uniformly. For the present, therefore, the situation is decidedly bright, and very sanguine expectations are expressed in regard to developments in the near future.

Cincinnati.

FIFTH AND MAIN STS., July 3, 1901.—(By Telegraph.)

Quietness is still the order of the day in Pig Iron circles. The trading is confined almost exclusively to retail orders and but few are booked for a larger amount than 100 tons. There was a sale of 900 tons of No. 3 Southern Foundry a few days ago, which was the most important transaction of the week so far as reported. The buyers in this transaction claim to have done better for themselves on this Iron than \$9.50, Birmingham, and the competing sellers who missed the orders think the claim to be correct. Houses with agency connections at Pittsburgh report some activity in Basic Irons at that point. There are now several inquiries in for Mill Irons and one or two for Pipe grades which may be closed within the next week. Outside of these the market is at a standstill and weak at the given quotations. Freight rate from Birmingham is \$2.75 to this point; from Hanging Rock district, \$1. We quote, f.o.b. Cincinnati:

Southern Coke, No. 1.....	\$13.50 to \$13.75
Southern Coke, No. 2.....	13.00 to 13.25
Southern Coke, No. 3.....	12.25 to 12.75
Southern Coke, No. 4.....	11.75 to 12.00
Southern Coke, No. 1 Soft.....	13.50 to 13.75
Southern Coke, No. 2 Soft.....	13.00 to 13.25
Southern Coke, Gray Forge.....	11.75 to 12.00
Southern Coke, Mottled.....	11.75 to 12.00
Ohio Silvery, No. 1.....	15.50 to 16.00
Ohio Silvery, No. 2.....	14.50 to 15.00
Lake Superior Coke, No. 1.....	14.50 to 15.00
Lake Superior Coke, No. 2.....	14.00 to 14.50
Lake Superior Coke, No. 3.....	13.50 to 14.00
Southern Basic.....	13.75 to 14.00

Car Wheel and Malleable Irons

Standard Southern Car Wheel, chilling grades.....	\$18.25 to \$18.75
Standard Southern Car Wheel, No. 2.....	17.25 to 17.75
Lake Superior Car Wheel and Malleable.....	18.50 to 19.00

Plates and Bars.—The market is quiet and considered rather firm. We quote, f.o.b. Cincinnati: Iron Bars, in carload lots, 1.60c., with half extras; same in small lots, 1.80c., with full extras; Steel Bars, in carload lots, 1.55c., with half extras; Base Angles, in carload lots, 1.80c.; Plates, ¼-inch and heavier, 1.80c.; Sheets, No. 16, 2.50c.

Old Material.—Business has been quiet, with but little change in the price-list. No. 1 Wrought is quotably lower, otherwise the list is unchanged. We quote dealers' buying prices, f.o.b. Cincinnati, as follows: No. 1 Wrought Railroad Scrap, per net ton, \$13.25 to \$13.50; Cast Railroad Machine Scrap, \$12.25 to \$12.75; Iron Axles, \$18.75 to \$19; Iron Rails, \$16.75 to \$17.25; Steel Rails, rolling mill lengths, \$14.75 to \$15.25; short lengths, \$13.75 to \$14; Car Wheels, \$15.75 to \$16.25. All prices except No. 1 Wrought on the basis of gross tons.

St. Louis.

CHEMICAL BUILDING, July 3, 1901.—(By Telegraph.)

Pig Iron.—The market continues in the quiet condition which has characterized it for the past 60 days. There are quite a number of inquiries at hand, which, however, do not develop into sales of any moment. We do not hear of any transactions which run over 500-ton lots, and these are not very plentiful, the majority calling for quantities from 300 tons down to carloads. The firm stand taken by the large producers not to further shade the prices has resulted in filling the order books of the smaller concerns, and has also strengthened the impression that prices are as low as they are likely to go. As there are only a limited number of consumers who have arranged for their requirements beyond September 1, an early increase in the demand is confidently anticipated. We quote carload lots as follows, f.o.b. St. Louis:

Southern, No. 1 Foundry.....	\$14.25 to \$14.50
Southern, No. 2 Foundry.....	13.75 to 14.00
Southern, No. 3 Foundry.....	13.25 to 13.50
Southern, No. 4 Foundry.....	12.75 to 13.00
No. 1 Soft.....	14.50 to 14.75
No. 2 Soft.....	14.00 to 14.25
Gray Forge.....	12.25 to 12.50

Bar Iron.—The demand for Bars is steady, and some difficulty is experienced in securing prompt shipments. Dealers are anticipating their requirements, so that mills are comfortably employed. Mills quote Iron Bars at 1.55c. to 1.60c., and Steel Bars at 1.60c. to 1.65c. Jobbers quote Iron Bars at 1.85c. to 1.90c.; Steel, 1.95c. to 2c., full extras.

Rails and Track Supplies.—A fairly active demand for Rails is reported, particularly for the lighter sizes. Track Supplies are also in good demand. We quote as follows: Splice Bars, 1.80c. to 1.85c.; Bolts, with Square Nuts, 2.45c. to 2.55c.; with Hexagon Nuts, 2.80c. to 2.85c.; Spikes, 1.90c. to 1.95c.

Pig Lead.—The demand for Pig Lead has been very strong for the past few days, and some good sized lots have been placed at 4.35c. The demand is from consumers entirely, there being apparently no speculation in the market. Higher prices are anticipated.

Spelter.—There is not much doing in Spelter, sellers asking 3.82½c. to 3.87½c., according to quantity.

Cleveland.

CLEVELAND, OHIO, July 2, 1901.

Iron Ore.—There are unmistakable upward tendencies in Lake rates for the transportation of Iron Ore. This was first noted the latter part of the week and was still further emphasized yesterday and to-day. The shippers began by bidding up for tonnage to go to Buffalo furnace, where the draft ships must be light to accommodate themselves to the channel of the river. The differential offered on these cargoes was seen to be out of proportion, being 10c. higher than the rate paid to all other ports. The taste of better rates stirred up the desires of the owners, and now most of them are holding out for 5c. better on all cargoes. It is doubtful if this will be paid immediately, but it shows the drift of the market. The demand for increased rates does not ease up the demand for boats any. Shippers are rushing material down the lakes seemingly regardless of the ability of the docks to receive it. The result has been that some delays have been occasioned, which in instances have been rather severe.

Pig Iron.—The better demand for Finished Material is producing its effect upon the Pig Iron trade. Bessemer is in better demand than it was and some good sized sales have been made. So far this is the best indication of the strength of the market, for while other grades show tendencies of falling in line with Bessemer, they have not been the subject of very heavy transactions so far. Some Basic has been sold for the third quarter at varying prices. Recently a sale of 5000 tons was made for July delivery at \$14.75. Prior to that a larger amount was sold at \$15, and now some reports have it that sales have been made as low as \$14.50. It seems, however, that a quotation of \$14.75 would come nearer the actual market conditions. Some heavy buying is expected in this quarter in the near future. The Foundry grades are listless. Buyers are still taking material in small lots, buying only to meet their immediate needs. The business past July 1 has hardly opened up so far. There are indications of good business in the future, but the actual sales have not been made. Upon all sales noted now the old quotations of \$14.50 for No. 1 and \$14 for No. 2 still prevail.

Finished Material.—Some of the orders for Finished Material expire with July 1, and the buyers are now rushing to get under cover before the capacities of the mills for the second half of the year are filled up. The result of this is that orders are coming in very heavily now, indicating, even more strongly than the business of last week, that the present activity of production is to continue through the second half of the season. Probably the greatest activity is in the purchasing of Plates. Last week the report was made that the Carnegie Steel Company had received an order from the American Shipbuilding Company for 56,000 tons of ship material, including Plates and Shapes. This was on a provisional basis, but this week orders for 15,000

tons have been given outright to apply on the former provisional order. This was occasioned by contracts for seven new ships. Two of these are for Captain John Mitchell of Cleveland, and five more are for J. C. Gilchrist of Cleveland. Besides this a new company have been formed to build three other ships, and several more orders are immediately in sight which will keep the ship yards engaged for the remainder of the year at least. The buying has been equally heavy in Structural Material, although the capacity of the plants will not permit of such extensive orders being taken. Applications on former contracts, however, fulfill the place of new orders and the mills are kept busy. The price of both Plates and Structural Shapes remains at 1.70c. The demand for Bars keeps up with the supply—not as great as some of the consumers might wish, the mills being pretty well filled up with orders. The prices are quoted still at 1.40c. for Bessemer and 1.50c. for Open Hearth Bars at the mill. There is a report on the market that the Everett-Moore syndicate are out for more Rails and that an order of considerable size will be closed in a day or so. The price remains firm at \$28. The Upson Nut Company are also on the market for between 3000 and 4000 tons of material, mostly Rivet and Bolt Rounds. Yesterday the sales agencies of the American Steel Hoop Company, the National Steel Company, the Illinois Steel Company, the Lorain Steel Company and the Carnegie Steel Company were all united in this city under the Carnegie Steel Company, with J. R. Mills in charge. Report has it also that on the same date the United States Steel Corporation assumed control of the Shelby Steel Tube Company, the general offices of which have hitherto been located in Cleveland.

Old Iron.—The dealers in and the buyers of Scrap are coming to an understanding as to prices, and some business may be done before the week is over. Sales have been prevented recently by a deadlock on the price, the buyers demanding a reduction and the dealers holding out for the prices which prevailed before lower prices were agreed to on Pig Iron. It is expected now that a settlement will be made soon on a slightly reduced scale of prices.

Birmingham.

BIRMINGHAM, ALA., June 30, 1901.

A halt seems to have been called on the decline in Iron, and the feeling seems to be better. The disposition to sell at prices that have prevailed of late grows less and less and confidence in a more active market and in better prices grows apace. As far as can be ascertained the bulk of the sales for the week were at full quotations. But there were no large orders placed. While this was so, inquiries were materially increased and the usual indications of a more active market near at hand were observable. Large interests were prominent in feeling the market, but all efforts to squeeze prices were failures. Several lots of No. 2 Foundry below 500 tons were sold at \$11, and although it is quoted by some at \$10.50 those who have it are holding for \$11. Efforts of local buyers to secure certain make at \$10.50 were not successful. The same can be said of No. 2 Soft. All the cheap Gray Forge seems to have been absorbed and that grade is now quoted at \$9.50. No. 4 Foundry varies from Gray Forge price to 25c. above it.

All last week the leading officials were in conference with the miners regarding wages for the coming year, and a full detailed report of the market was impossible. It looked for some time as if an agreement would not be reached. But at the final session on Saturday night an agreement was had practically continuing the wage scale of last year. This must be ratified by the various mining camps to be effective. It will be accepted, and on Tuesday the scale will be signed, and the question of a labor strike settled. The semi-monthly pay day was what the miners most desired. If granted it would necessitate an increase in the office force of the operators, and increase expenses, and the operators firmly opposed it and finally carried their point. The action of the rail-

roads in lowering the rate of freight 50c. per ton on export Iron makes probable the revival at an early date of the export trade. The export buyers are keeping in close touch with the market and the margin of difference is gradually lessening. There is still a fine trade in Steel products and prices still continue to be very acceptable. The report is revived concerning the intention of the Sloss-Sheffield Company to erect a Steel plant, but the company officials are not giving out any information concerning it. It is simply a question of time as to its erection.

An important sale of real estate was made the past week, indicating the confidence of capital in Birmingham property. What is known as the Boddie Corner at First avenue and Twentieth street, was sold to an outside party for \$85,000. It is current rumor that a "sky scraper" office building will be erected upon the lot.

The Bryan-Austin Company at Ensley, in addition to the extension being added to their works have purchased adjoining property in anticipation of further enlargement which their constantly increasing trade clearly fore-shadows.

Pittsburgh.

HAMILTON BUILDING, July 3, 1901.—(By Telegraph.)

Pig Iron.—The Pig Iron market is in the same condition as noted in our last report. The United States Steel Corporation, the Cambria Steel Company and one or two smaller consumers have bought small lots of Bessemer Iron, mostly for July shipment, the price being \$15.25, Valley furnace, or \$16, Pittsburgh. It is a fact that a few small lots of Bessemer Iron of 300 to 500 tons each are being offered at \$15, Valley furnace, or \$15.75, Pittsburgh. These, however, do not reflect the actual situation. Bessemer Iron for July shipment is pretty well sold up, and the furnaces are holding firm, at \$15.25, Valley furnace. Forge Iron is \$13 to \$13.25, Valley, or \$13.75 to \$14, Pittsburgh. Foundry Iron is unchanged. We quote Bessemer Iron at \$15.25 or \$16, Pittsburgh; Gray Forge, \$13 to \$13.25, or \$13.75 to \$14, Pittsburgh; No. 1 Foundry, \$15 to \$15.25; No. 2, \$14.50 to \$14.75; No. 3, \$14 to \$14.25, all f.o.b. cars Pittsburgh.

Steel.—Billets for prompt shipment continue to bring \$24 to \$24.50, maker's mill, Pittsburgh or Youngstown. The Cambria Steel Company are offering Basic Billets very freely and we quote these at \$24.50 to \$25, maker's mill.

Muck Bar.—Owing to the shut down of several mills that make Muck Bar the supply is scarcer and standard grades for prompt shipment can hardly be had. The price has gone up rapidly and we quote standard grades at \$29.25 up to \$30, Pittsburgh. Sales have been made at the former price.

(By Mail.)

The scale for puddling and finishing mills adopted at the conference held in this city on Saturday, June 29, and which was signed by the Republic Iron & Steel Company for all their mills and which the American Steel Hoop Company agreed to sign for their union mills only, is printed elsewhere in this issue. The report that the refusal of the American Steel Hoop Company to sign the scale for their nonunion mills resulted in these mills being shut down is incorrect. They are all in operation, and the same is true of the nonunion Sheet mills of the American Sheet Steel Company, who have also refused to sign the Sheet scale for their non-union mills. Efforts of the Amalgamated Association to bring the men out have failed. Operations and output at all the Iron and Steel works, and, in fact, at manufacturing places of all kinds, have been greatly interfered with by the excessively hot weather of the past week. The men have been utterly unable to work steadily, and many plants are running very short handed and with a much reduced output. The surprise of the week is the reduction of \$5 a ton made in prices of Sheets by the American Sheet Steel Company, effective on July 1. This was unexpected by the trade to a very great extent, and in the face of the present conditions in the Sheet business it is accepted by the trade as a part of the policy of the

United States Steel Corporation in keeping the prices of their products on as conservative a basis as possible. Aside from the above, nothing of special interest has occurred in the Iron trade since our last report.

Ferromanganese.—We continue to quote imported 80 per cent. Ferro at \$53.50, delivered f.o.b. cars Pittsburgh. Domestic Ferro is held at \$55 a ton.

Plates.—The report that the Plate Mills Association had met last week and advanced prices is untrue. No meeting was held, and, in addition, it is realized that the price of Plates is high enough, and if any change is made it would be a lowering in price. Some mills advise us that tonnage in Plates is increasing and inquiries are much better. The Government is expected to place before long from 50,000 to 60,000 tons of Plates to go on boats. We quote: Tank quality, ¼-inch and heavier, 1.60c.; 3-16-inch, 1.70c.; under 3-16-inch and above No. 10, 1.75c.; Flange or Boiler Steel, 0.1c. advance over the base of Tank; Marine and Fire Box, American Boiler Manufacturers' Association specifications, 0.2c. advance over Tank; Still Bottom Steel, 0.3c. advance over Tank; Locomotive Fire Box Steel and equivalent specifications, 0.5c. advance over Tank, all f.o.b. Pittsburgh.

Rails.—Some foreign business is being offered in Rails, but has been turned down by the mills, who are unable to take it, being sold up for balance of the year. A few small domestic orders are being placed. We quote at \$28, at mill.

Sheets.—Effective July 1, the American Sheet Steel Company reduced prices on both Black and Galvanized Sheets about \$5 a ton. The new prices on Black Sheets, box annealed, one pass through cold rolls, are as follows: Gauges 10 and 12, 2.30c.; 13 and 14, 2.40c.; 15, 16 and 17, 2.50c.; 18 to 21, 2.60c.; 22 to 24, 2.70c.; 25 and 26, 2.80c.; 27, 2.90c.; 28, 3c.; 29, 3.15c.; 30, 3.25c. The price of Galvanized was reduced from 70 and 10 to 70, 10 and 5 per cent. off. The above prices apply on carload lots to jobbers, while to the smaller trade an advance is charged for small lots. The Sheet trade is just as active as ever and the mills are from two to three months behind in deliveries. Galvanized Sheets are harder to obtain than Black, the leading interest not promising deliveries inside of three months. With these conditions existing in the Sheet trade this cut of \$5 a ton in prices by the American Sheet Steel Company was a very great surprise.

Muck Bar.—We quote standard grades of Muck Bar at \$28.50 to \$29, delivered f.o.b. cars Pittsburgh.

Bars.—A slightly better demand in both Iron and Steel Bars is reported, and the closing down of the union mills of the American Steel Hoop Company on account of labor troubles may create a scarcity in Bars should it continue for any considerable length of time. We quote Steel Bars at 1.40c., at mill, half extras. On Open Hearth Steel Bars \$2 a ton advance is charged, and also extras on high carbons. All prices on Steel Bars are f.o.b. Pittsburgh, with freight added. We quote Common Iron Bars at 1.40c. to 1.45c., half extras, at Valley mill. We quote Hoops at 1.85c., base, for carload lots. Bands up to 12 gauge are sold on the Steel Bar card, and we quote at 1.40c., half extras.

Structural Material.—A good deal of tonnage is being placed, and some large jobs are being figured upon which will likely be given out before long. Among these is a considerable tonnage for track elevation in the East. There is no change in prices and we quote: Beams and Channels, up to 15-inch, 1.60c.; over 15-inch, 1.70c.; Angles, 3 x 2 up to 6 x 6 inches, 1.60c.; smaller sizes, 1.55c. to 1.60c.; Zees, 1.60c.; Tees, 1.65c.; Steel Bars, 1.40c. to 1.50c., half extras, at mill; Universal and Sheared Plates, 1.60c. All above prices are f.o.b. Pittsburgh.

Merchant Steel.—There is only a fair demand and prices are not as strong as they have been, and on good orders our quotations would be shaded. We quote: Tire Steel, 1.60c.; Toe Calk, 1.85c.; Open Hearth Spring, 2c.; Plow Slabs, 2c.; Tool Steel, 6c. and upward, depending on quality. On Tool Steel freight is allowed.

Skelp.—We quote Grooved Iron Skelp at 1.82½c. to 1.85c., maker's mill, and Sheared at 1.90c. to 2c., depend-

ing on sizes and deliveries wanted. Steel Skelp is from \$2 to \$3 a ton lower than Iron.

Tubular Goods.—We note a continued heavy demand for Tubular Goods of all kinds, and some sizes of Pipe are hard to obtain for prompt delivery. Prices are firm and base prices made by the mills to small consumers are as follows:

Merchant Pipe.		Per cent.	Per cent.
		Black.	Galvd.
1/4 to 1 1/2 inch and 11 to 12 inch.....		61	48
3/4 to 10 inch.....		68 1/2	56
Casing, Random Lengths.		S. & S.	I. J.
2 to 3 inch.....		55	53 1/2
3 1/4 to 4 inch.....		63	59
4 1/4 to 12 1/2 inch.....		65	61 1/2
Casing, Cut Lengths.		S. & S.	I. J.
2 to 3 inch.....		53 1/2	59
3 1/4 to 4 inch.....		59	55
4 1/4 to 12 1/2 inch.....		61 1/2	57 1/2
Boiler Tubes.		Up to 22 feet.	
Steel.		Per cent.	
1 inch to 1 1/4 inch and 2 1/4 inch to 5 inch, inclusive....		65 1/2	
2 inch to 2 1/2 inch, inclusive.....		60	
6 inch and larger.....		59	
Iron.			
1 inch to 1 1/2 inch and 2 1/2 inch.....		43 1/2	
1 1/4 inch to 2 1/4 inch.....		43	
2 1/4 inch to 13 inch.....		53	

Prices made by the mills to the jobbers are from 5 to 10 per cent. or more lower than the above, depending on the order. It should be noted that the above prices are for small lots.

Coke.—Last week there was a material increase in the output of Coke in the Connellsville region and also in the total number of ovens. Continental works No. 1 of the Continental Coke Company of Uniontown has been finished and 300 ovens have been fired up. The total plant is to contain 600 ovens, and the other 300 will soon be ready for operation. There is now a total of 21,747 ovens in the Connellsville region, of which 20,002 were active last week and only 1745 idle. The Dunbar Furnace Company started up 14 ovens and now have a total of 5137 in the Connellsville region. The total output of Coke last week was 233,858 tons, a gain over previous week of 21,307 tons. The shipments for week were 10,795 cars. We quote strictly Connellsville Furnace Coke at \$1.75 to \$2 a ton. Main Line Furnace Coke is being offered at \$1.60 to \$1.75 a ton, and in some cases prompt Coke is offered at lower prices. Strictly Connellsville 72-hour Foundry Coke is quoted at \$2.25 to \$2.50 a ton and Main Line Foundry from \$2 to \$2.15 a ton to consumers.

New York.

NEW YORK, July 3, 1901.

Pig Iron.—The market has been very quiet during the week under review, no sales of any magnitude are reported. We quote: Lehigh, Schuylkill and Virginia Irons, No. 1, \$16 to \$17.50; No. 2 X, \$14.75 to \$15.75; No. 2 Plain, \$14 to \$14.50; Gray Forge, \$14 to \$14.50; Tennessee and Alabama brands, No. 1 Foundry, \$14.75 to \$15; No. 2 Foundry, \$14 to \$14.50; No. 1 Soft, \$14.50 to \$15; No. 2 Soft, \$14 to \$14.50; No. 3 Foundry, \$13.25 to \$13.50; No. 4 Foundry, \$12.75 to \$13.25; Gray Forge, \$12.75 to \$13.

Cast Iron Pipe.—The shops are generally speaking very full of work, and the majority of them have now drawn heavily upon the stock with which they usually start in the spring.

Steel Rails.—Report has it that European makers are capturing at low prices small orders which are coming up for Cuba. The interesting announcement is made that the Tennessee Coal, Iron & Railroad Company will not roll any Steel Rails this year. We understand that the management will devote all its energies toward cheapening the cost of the Steel Ingots and Billets and bringing that part of the plant to full efficiency. We quote \$28 for Standard Sections, \$32 to \$32.50 for Girder Rails, and \$22 to \$23 for Relays. We quote Spikes, 1.80c. to 1.85c.; Splice Bars, 1.45c. to 1.50c.; Hexagon Track Bolts, 2.65c. to 2.70c. at mill.

Finished Iron and Steel.—The market has been quiet. The Eastern makers of Bars have reached an agreement as to prices. We quote as follows at tide-

water: Beams, Channels and Zees, 1.75c. to 1.80c.; Angles, 1.75c. to 1.80c.; Tees, 1.80c. to 1.85c.; Bulb Angles and Deck Beams, 2c.; Sheared Steel Plates are 1.80c. to 1.85c. for Tank, 1.90c. to 1.95c. for Flange, 2c. to 2.05c. for Fire Box. Charcoal Iron Plates are held at 2.25c. for C. H. No. 1, 2.75c. for Flange, and 3.25c. for Fire Box. Refined Bars are 1.58c. to 1.60c.; Soft Steel Bars, 1.62 1/2c. to 1.65c., and Hoops, 1.90c. to 2c., base, on dock.

Daniel F. Cooney, Iron and Steel merchant, 88 Washington street, New York, announces that he has given an interest in his business to A. B. Murray and A. J. Murray, the name of the new company being D. F. Cooney & Co.

Metal Market.

NEW YORK, July 3, 1901.

Pig Tin.—The New York market has been inactive since our last report, with prices rather in buyers' favor. At the close the market here was nominal at 27.80c. to 28.50c. for Spot, 27.70c. to 28.25c. for July; August sellers at 27.75c., and September sellers at 27.25c. The London market is cornered on spot Tin, and closed to-day at £130 5s., while futures ruled at £119 15s. The following statistics for the month of June are published by the New York Metal Exchange: Arrivals at the Atlantic ports were good. Deliveries were the largest on record; the total for the first half of this year is 600 tons more than for the same time last year. The monthly shipments from the Straits were large. The increase in the Straits shipments to Europe and America during the first half of this year amounts to 2700 tons. The total statistics show a decrease of 2225 tons as compared with the previous month. The heavy decrease came through the writing off of 750 tons, representing the cargo of the wrecked steamship "Asturia." The total visible supply on June 30 is 5654 tons, or 436 tons below that of June 30 of last year.

Copper.—No change has taken place in the market here, but there are some rumors of cutting of prices in certain quarters. Quotations are 17c. for Lake and 16 1/2c. for Electrolytic and Casting Copper. The consumptive demand is of very moderate proportions. The London market has declined from day to day, closing to-day at the lowest figures for the year—viz., £67 for spot and £67 10s. for futures. Best Selected has declined 5 shillings, being quoted at £74. The following are the New York Metal Exchange statistics for the month of June:

The exports of Domestic Copper from Atlantic ports for the month of June, as per official returns, and compiled by the New York Metal Exchange, were as follows:

	Copper.	Matte.
	Tons.	Tons.
From New York.....	6387	2060
From Baltimore.....	1826	....
From Philadelphia.....	82	....
Total	8295	2060

Reducing the Matte at 55 per cent. into fine Copper, the total exportation for June amounts to 9428 tons of 2240 lbs.

Lead.—There has been no change of any kind in this metal. The American Smelting & Refining Company are quoting at 4.37 1/2c. for Desilverized, New York. The St. Louis market is firm, at 4.30c. to 4.40c., according to quality. The London market declined somewhat, being quoted to-day at £12 6s. 3d. According to the official returns of the New York Metal Exchange, exports of Lead from this port during the month of June amounted to 7604 tons of 2240 pounds. Arrivals from Mexico during last month amounted to 4200 tons.

Spelter.—Is still dull and weak, at about 3.90c. to 3.95c. for spot to September. The St. Louis market rules at 3.80c. The London market declined 7 shillings 6 pence, to £16 10s.

Antimony.—No change has taken place in this metal. Prices are steady at 8 1/2c. for Hallett's and 10 1/4c. for Cookson's.

Nickel.—Is firm and unchanged, at a basis of 60c. for lots not covered by yearly contract.

Quicksilver—Is unchanged, prices being quoted at \$51 per flask of 76½ pounds for lots of 50 flasks and more. London quotations are without a change, the market being £9 2s. 6d.

Tin Plate.—Business continues in good volume, and there is a decided scarcity in certain lines of Plates, which is becoming more pronounced week by week. The American Tin Plate Company quote on the basis of \$4.19 per box of Standard 100-lb. Cokes, f.o.b. New York, and \$4 per box, f.o.b. mill, for deliveries until October 1.

Owing to the extreme heat of the weather, the New York Metal Exchange will be closed from Thursday, July 4, until Monday, July 8.

The New York Machinery Market.

NEW YORK, July 3, 1901.

While New York manufacturers and dealers in machinery believe that the strike has been broken, they are convinced that the excessively hot weather of the past 12 days has seriously interfered with business. Those who can spare the time are out of town, and those who are compelled to stay at their desks do not much care whether orders come their way or not. In other words, they are not leading a strenuous life looking for business that is not to be found. Several of the forging departments of works in New York and nearby places have been compelled to shut down because of the heat. Prostrations have been numerous and the men, becoming frightened, have refused to work.

The strike has been effectually broken in the New York district, and all the plants affected are rapidly reaching their full quota of men. In a few cases men are applying in greater numbers than the demand warrants. It will take a few days for the shops to reach their full capacity, especially in those which have a large proportion of new men not familiar with their surroundings.

No large projects calling for machinery are in sight for the near future. The present demand is, for the time of year, good for standard tools and slow for special designs. Stocks are running low, even with builders who have had no labor trouble, as they have been called upon to help those concerns who have been closed.

Last month was an exceptionally good one for the Niles Tool Works Company. The Westinghouse interests ordered largely, as well as the railroad companies, so that the aggregate for June was excessive. The prospect for the demand keeping up is unusually bright.

The Cahall Sales Department have sold to the Dominion Iron & Steel Company at Cape Breton, Nova Scotia, 18 boilers, having an aggregate of 5000 horsepower, of the Babcock & Wilson type. While business in boilers cannot be considered favorable, the shops are busy on work contracted for some time ago.

Prentice Tool & Supply Company report business active along their regular lines.

The Lidgerwood Mfg. Company are building a new electric power house at their already extensive works in Brooklyn. The equipment will consist of 250 horsepower vertical boilers and 200 electric horse-power generator and engine. The power will be distributed to electric motors located where needed. The electric part of the equipment was furnished by the General Electric Company and the engine by E. P. Allis Company of Milwaukee. They are also building a boiler shop 80 x 223 feet. As soon as this has been completed they will use their old boiler shop as an erecting room. During the past year the trade of this company has averaged a boiler or engine each one hour and a half.

The Lidgerwood Mfg. Company have just received a contract to fit the Russian battle ship "Retvizan," building at the Cramps, with the Lidgerwood-Miller marine cableway for coaling at sea. This is the first marine cableway operated by electricity, and it is contemplated that the winches will be able to handle the cableway from a sailing ship in tow and will also take coal from a steam collier towing the battle ship. The operating winches are placed on wheels, so that they can

be moved around the deck of a ship not only to operate the cableway at sea, but also for coaling alongside in harbor. The capacity of the plant will vary from 20 to 40 tons an hour, according to weather conditions. The shear poles and chute, as installed on the battle ship "Massachusetts," are dispensed with in the new construction, the arrangement being such that when the load of coal is brought aboard the cable is depressed so that the coal is immediately landed on deck. The company are building a similar outfit for the battle ship "Illinois."

Building operations in New York are exceedingly dull, more so than is usual even at this time of the year. Contracts for large buildings are usually let before May 1, the expectation being to complete the building in one year's time, so as to be ready for occupancy at the letting season. No large structures, as far as known, have been planned since the contracts for the new Macy building were taken by the Fuller Construction Company.

The Bureau of Yards and Docks, Navy Department, will receive bids on July 13 for the erection of the structural steel work for a roof about 60 x 246 feet at the Navy Yard, Washington.

On July 12 the Bureau of Navigation of the Navy Department will receive bids for the construction of the Marine Engineering and Naval Construction Building at the Naval Academy, Annapolis.

The commissioners of Washington, D. C., will receive bids on July 13 for erecting pumping machinery, boilers and auxiliaries required to equip the sewerage pumping station in that city.

The United States Engineers' office will open bids on July 27 for installing an electric light plant at Fort Washington, Md.

New York City will receive bids on July 8 for the erection or alteration of nine school buildings.

The following bids were received by the Chief of Bureau of Yards and Docks, Navy Department, for constructing a steel roof, two gallery floors, with an electric traveling crane of 40 tons capacity, for the Navy Yard at Boston:

Penn Bridge Company, \$65,960 for all interior fittings and slate roof, and \$67,460 for the same with a tile covered roof. The King Bridge Company of Cleveland, Ohio, bid \$69,000; Connors Brothers, Lowell, Mass., bid \$55,832, and Snare & Trist of New York bid \$57,890.

In the announcement of the establishment of a Boston office of the Prentiss Tool & Supply Company, made in this column last week, we omitted to enumerate among the agencies that of the Acme Machine Screw Company of Hartford, Conn.

The Sheet and Hoop Mill Strike.

PITTSBURGH, PA., NOON, July 3, 1901.—(By Telegraph.)

—The labor situation has not changed. The nonunion mills of the American Steel Hoop Company and the nonunion sheet mills of the American Sheet Steel Company are running to nearly full capacity. Many men are off work on account of the heat, and it is possible that some of the men belonging to the Amalgamated Association, who work in these mills, may have quit work, but there are very few. No date has as yet been arranged for another conference of officials of the American Steel Hoop Company and the American Sheet Steel Company with the Amalgamated Association Wage Committee.

The Dayton Strike.—The Employers' Association of Dayton, Ohio, has printed in pamphlet form and is circulating very extensively the decision which Judge Kumler has rendered in the famous case of the Dayton Mfg. Company vs. the Metal Polishers, Buffers, Platers and Brass Workers' Union, No. 5. The pamphlet contains not alone the opinion, but also the arguments.

Herbert Dupuy, a director of the Crucible Steel Company of America, has purchased 91 acres of coal lands in the Klondike district in the Connellsville region, at the reported price of \$375 an acre.

The Amalgamated Scale.

At a conference held in Pittsburgh on Saturday, June 29, between the Wage Committee of the Amalgamated Association and representatives of the American Steel Hoop Company and Republic Iron & Steel Company, the puddling and bar iron scales for the year commencing July 1, 1901, were arranged. The men secured a slight advance in wages, and there were also some important changes made in the footnotes. We give below all the changes made in the scale, including those in the footnotes.

The boiling scale is as follows:

Boiling.		Boiling per ton, 2240 pounds.
Based on actual sales of bar iron, as per conference agreement.		
1	c. bar iron.....	\$5.00
1	1-10c. bar iron.....	5.00
1	2-10c. bar iron.....	5.00
1	3-10c. bar iron.....	5.25
1	4-10c. bar iron.....	5.50
1	5-10c. bar iron.....	5.75
1	6-10c. bar iron.....	6.00
1	7-10c. bar iron.....	6.12½
1	8-10c. bar iron.....	6.25
1	9-10c. bar iron.....	6.37½
2	c. bar iron.....	6.50

The footnotes are unchanged in the boiling scale down to and including No. 21. Three new footnotes have been added, as follows:

22. That no double furnace be allowed to work without four (4) men.

23. That company furnish help to shovel slack or coal when more than 14 feet from the furnace.

24. That puddlers and scrappers shall not be paid for any ball weighing ten (10) pounds above the limit allowed in the mill.

The muck or puddle mill scale is unchanged throughout, except that a new footnote, No. 6, has been added, as follows: "The wages of muck roll hands shall advance and decline in proportion to muck rollers' wages."

In the scale for piles on boards an advance throughout was given to the men. The new scale is as follows:

Piles on Boards.		Piles on boards, per ton, 2240 pounds.
Based on actual sales of bar iron, as per conference agreement.		
1	c. bar iron.....	\$1.63
1	1-10c. bar iron.....	1.67
1	2-10c. bar iron.....	1.71
1	3-10c. bar iron.....	1.74
1	4-10c. bar iron.....	1.77
1	5-10c. bar iron.....	1.80
1	6-10c. bar iron.....	1.85
1	7-10c. bar iron.....	1.86
1	8-10c. bar iron.....	1.89
1	9-10c. bar iron.....	1.92
2	c. bar iron.....	1.95

The footnotes under this scale are unchanged. In the scale for busheling on sand bottom the men were also granted an advance, the figures in the new scale being as follows:

Busheling on Sand Bottom.		
Based on actual sales of bar iron, as per conference agreement.		
1	c. bar iron.....	\$2.20
1	1-10c. bar iron.....	2.20
1	2-10c. bar iron.....	2.20
1	3-10c. bar iron.....	2.30
1	4-10c. bar iron.....	2.35
1	5-10c. bar iron.....	2.40
1	6-10c. bar iron.....	2.45
1	7-10c. bar iron.....	2.50
1	8-10c. bar iron.....	2.55
1	9-10c. bar iron.....	2.60
2	c. bar iron.....	2.65

The footnotes in the scale for busheling on sand bottom are unchanged until No. 6 is reached, which has been changed to read as follows:

"6. Wire and sides of sheets No. 19 gauge and lighter, when in bundles not heavier than 40 pounds and not exceeding 18 inches in length, the price to be one-half (½) the price of boiling. When over forty (40) pounds, 25 cents extra shall be paid in the total tonnage of bundles used."

In the scale for bar and 12-inch mills the men were granted a straight advance, the new scale being as follows:

Bar and 12-Inch Mills.		Bar rolling and heating 2240 per ton.
Based on actual sales of bar iron, as per conference agreement.		
1	c. bar iron.....	\$0.61 ⁷ / ₁₀
1	1-10c. bar iron.....	.63
1	2-10c. bar iron.....	.64 ⁴ / ₁₀
1	3-10c. bar iron.....	.65 ¹ / ₁₀
1	4-10c. bar iron.....	.67

1	5-10c. bar iron.....	.68 ⁵ / ₁₀
1	6-10c. bar iron.....	.70
1	7-10c. bar iron.....	.71 ⁴ / ₁₀
1	8-10c. bar iron.....	.72 ⁷ / ₁₀
1	9-10c. bar iron.....	.74 ¹ / ₁₀
2	c. bar iron.....	.75 ⁹ / ₁₀

In the footnotes No. 2 in the old scale, which reads as follows, has been stricken out:

"2. All sizes below one and one-half by one-half (1½ x ½) inch flats, one (1) inch rounds, and seven-eighths (¾) inch squares, when worked on a twelve (12) inch mill, to be paid for at guide mill prices. One (1) inch rounds, when worked by hand on a twelve (12) inch mill, shall be paid for at guide mill prices."

Footnote No. 4 is now No. 3 and has been changed to read as follows:

"3. Roughing down on bar and 12-inch mill shall be paid not less than 18 4-10 cents per ton, with 2 cents extra per ton where rougher has charge of guides and fixings, to be deducted from the roller's wages and paid by the company, and roughing up shall be paid not less than 15 5-10 cents per ton, to be deducted from the catcher's wages and paid by the company, and roughing shall advance and decline in accordance with basis above established."

There is no further change in the footnotes, but two new footnotes have been added, as follows:

"10. Where improved machinery, such as straightening machines, are installed to do away with men that were acting as straighteners, the company shall furnish equal amount of help when changing rollers.

"11. That the wages of the men working on bar and 12-inch mills, not mentioned in the above scale, to advance and decline in proportion to bar and 12-inch scale. This applies to heaters, helpers, firemen, rundowns, hookup, straighteners and dragouts."

In the scale of prices for mills making a specialty of working pipe from iron or steel, the new scale is as follows:

Prices for Mills Making a Specialty of Working Pipe or Skelp from Iron or Steel.

BAR AND 12-INCH MILLS.

Bar and 12-inch mills, when working pipe or skelp, at one (1) cent rate:

	Per ton.
Rolling	55½ c.
Heating	61 ⁷ / ₁₀ c.

On plate and tank mill scale the following is new: Plate and tank mills when working pipe, iron or steel at 1-cent rate, the price shall be as follows, and shall advance and decline in the same ratio as plate mill scale:

	Per ton.
Rolling	58 ⁵ / ₁₀ c.
Heating	70 ⁹ / ₁₀ c.

One footnote is given, as follows:

"1. It is understood that none of the above prices will be used as a criterion to reduce the prices paid for working other material."

The guide, 10-inch, hoop and cotton tie mills scale is as follows:

Guide, 10-inch, Hoop and Cotton Tie Mills.

"It is agreed that the base price at a 1-cent card rate based on actual sales of bar iron, as per conference agreement, with extras, shall be the straight one dollar and twenty-one cents (\$1.21) per ton for rolling, sixty-one and seven-tenths cents (61 7-10) for heating, thirty-two and three-fourths cents (32¾) per ton each for roughing and catching on guide, 10-inch, hoop and cotton tie mills, with 2 per cent. additional for each one-tenth advance or decline on said card from 1 to 2 cent card rate.

"The rollers, heaters, roughers and catchers shall each be paid by the company. It is understood, however, that this arrangement shall in no way detract from the authority of the roller in controlling all hands on mill, including hiring and discharging, and as heretofore the roller shall be held responsible for the work done.

"Bar mill heating price to govern base sizes alone.

"1. All sizes, No. 24 and lighter, 25 per cent. advance on above prices.

"2. On hoops ¾ inch and wider and number 20 and heavier 10 per cent. of the rollers' column and 6 per cent. off heaters' column off prices in above list. This to apply only to mills making a specialty of hoops and

QUOTATIONS OF IRON STOCKS DURING THE WEEK ENDING JULY 3, 1901.

Cap'l Issued.		Thursday.	Friday.	Saturday.	Monday.	Tuesday.	Wednesday.	Closing quotations.	Sales.
\$10,000,000	Am. Bicycle Co., Com.....		- 5					...	100
20,000,000	Am. Bicycle Co., Pref.....							...	
10,000,000	Am. Bicycle Co., Bonds....							...	
29,000,000	Am. Car & Foundry, Com..	30½-32	31½-32½	32½-32¾	32 -33	32½-32½		...	12,100
29,000,000	Am. Car & Fndry, Pref.§..	86½-87½	-88	88 -88¾	88¼-88¾	-89	89 -89¼	...	3,085
7,500,000	Bethlehem Iron†.....	-61½	-61½	-61½	-61			...	200
15,000,000	Bethlehem Steel‡.....	-23	-23½					...	300
7,974,550	Cambria Iron, Phila.*.....		-48½		-48			...	50
16,000,000	Cambria Steel**.....	26½ 26½	26½-27	-26¾	26 -26¼	26		...	3,000
17,000,000	Colorado Fuel & Iron.....	110½-113½	112 -115	115 -116	113 -116½	110¼-113		...	5,800
24,410,900	Crucible Steel, Com.....							...	
24,399,500	Crucible Steel, Pref.....							...	
1,975,000	Diamond State Steel||§§... 3½ 4		- 3½	- 3¾				...	2,000
15,000,000	International Pump, Com..	-40			-40	-39		...	500
12,500,000	International Pump, Pref..							...	
11,000,000	International Silver.....	8 - 8½	- 8		- 8½			...	700
10,750,000	Penna., new, Com., Phila..		-48		-50			...	100
16,500,000	Penna., new, Pref., Phila.§.	-89	-89		89 -89¼	-89¼		...	900
12,500,000	Pressed Steel, Com.....	-43¾	44¼-44¾	-44¾	44 -44¾	-44½	-44½	...	1,700
12,500,000	Pressed Steel, Pref.....	85½-85¼	-86					...	1,200
27,191,000	Repub. Iron & Steel, Com..	20½-21½	21¼-22	22 -22½	21¼-22½	21 -21¼		...	9,400
20,306,900	Repub. Iron & Steel, Pref..	74¼-75¼	-76	76 -76¼	76 -76½	74¾-75¾	-75¾	...	3,700
7,500,000	Sloss-Sheffield S. & I., Com.		35½-36			-35½		...	400
6,700,000	Sloss-Sheffield S. & I., Pref.‡							...	
20,000,000	Tennessee Coal & Iron.....	32 -33	67½-69¾	70 -73	69½-72½	69¾-70¾	70½-71	...	38,725
1,500,000	Tidewater Steel||.....		7 - 7½					...	700
506,473,400	U. S. Steel Co., Com.|||....	47½-48¾	48½-49½	49¾-49¾	47¾-48¾	47¾-48¼	47¾-48¼	...	174,905
508,486,300	U. S. Steel Co., Pref.|||....	97½-99	98½-99½	99½-99½	98 -99½	97¾-98¾	98 -98¾	...	81,200
1,500,000	Warwick I. & S.||.....		- 7½		- 7			...	300

Cambria Warrants, 18,000.

Preferred stocks 7 % cumulative unless otherwise stated. § 7 % Non-Cu. §§ New stock. | Par \$10. †† Par \$50. ‡‡ paid in. || Authorized Capital \$550,000,000 Common; \$555,000,000 Preferred; * Par \$50. ** \$10.50 per share paid in. + 6 % guaranteed by Beth. Steel Co. Late Philadelphia sales by telegraph.

Bonded Indebtedness: American Bicycle Co., \$10,000,000 sinking fund gold debentures 5 %; Cambria Iron Co., \$2,000,000 6 % debenture 20-year bonds, 1917, payable option 5 years, assumed by Cambria Steel Co.; Diamond State Steel Co., property leased from Diamond State Steel Co. at 4 % on \$1,000,000, \$6.25 on Steel stock paid in, \$1.25 called for June 1st total capital \$2,000,000; Tennessee C. I. & R. R. Co., \$8,861,000 6 %, \$1,114,000 7 %, \$1,000,000 7 % cu. pref.; Pennsylvania Steel, \$1,000,000 5 % Steelton 1st, 1917, \$2,000,000 5 % Sparrow's Point 1st, 1922, \$4,000,000 consolidated, both plants; Bethlehem Iron, \$1,351,000 5 % maturing 1907, interest and principal guaranteed by Bethlehem Steel Co.; Republic Iron & Steel, none; Warwick Iron & Steel, none; Colorado Fuel & Iron Co., Col. Fuel Co. Gen. Mort 6 % \$860,000, Col. Coal & Iron Co. Mort., 6 % \$2,644,000, Col. Fuel & Iron Gen. Mort. 5 % \$2,674,000, also outstanding \$3,000,000 preferred stock; Sloss-Sheffield St. & I. Co., Sloss I. & S. first mortgage 6 %, \$2,000,000, Sloss I. & S. general mortgage 4½ % \$2,000,000. U. S. Steel Corporation \$304,000,000 5 % gold bonds, also Am. S. & W. Co. \$180,656, Federal Steel Co. \$9,522,000 Illinois I. & S. \$7,417,000 E. J. & E. R. R. 5 %, \$1,600,000 Johnson 6 %, \$6,732,000 D. & I. R. R. R. 5 %, \$1,000,000 2d D. & I. R. R. R. 6 %, \$10,000 land grant D. & I. R. R. R. 5 %; National Steel \$2,561,000 6 %.

cotton ties. Special scale for half ovals below regular gauge to be inserted in new scale."

The notes under the above scale are unchanged until No. 7 is reached, which now reads as follows:

"No. 7. Where 10-inch guide, hoop and cotton tie mills average thirty-two dollars (\$32) or more per turn, an extra rougher shall be employed to assist both rougher and catcher during the months of June, July and August, the same to be paid one-half by roller and one-half by rougher and catcher."

Notes 8 and 9 are unchanged, but Note 10 has been changed to read as follows:

"10. The price for working cotton ties from hard steel shall be the straight three dollars and sixty-five cents (\$3.65) per ton, but no percentage shall be taken off until a mill averages thirty-seven dollars and fifty cents (\$37.50) in any pay, and then 5 per cent. to be deducted on all over \$37.50."

Notes Nos. 11 and 12 are unchanged, and two new footnotes, 13 and 14, have been added, as follows:

"13. Wages of all guide mill hands not provided for in the scale shall rise or decline with rollers' wages.

"14. All tees No. 11 and lighter to be paid for at 10 per cent. above scale price."

The new scale for plate and tank mills gives the men an advance, and is as follows:

Plate and Tank Mills.

	Rolling common iron, common iron. per ton.	Heating common iron, common iron. per ton.
Based on actual sales of bar iron, as per conference agreement.	2240 pounds.	2240 pounds.
1 c. bar iron.....	\$0.65 ¹⁰ / ₁₀	\$0.78 ¹⁰ / ₁₀
1 1-10c. bar iron.....	.66 ⁸ / ₁₀	.80 ¹⁰ / ₁₀
1 2-10c. bar iron.....	.68 ² / ₁₀	.81 ¹⁰ / ₁₀
1 3-10c. bar iron.....	.69 ⁸ / ₁₀	.83 ⁸ / ₁₀
1 4-10c. bar iron.....	.71 ¹⁰ / ₁₀	.85 ¹⁰ / ₁₀
1 5-10c. bar iron.....	.72 ¹⁰ / ₁₀	.87
1 6-10c. bar iron.....	.74 ² / ₁₀	.88 ¹⁰ / ₁₀
1 7-10c. bar iron.....	.75 ⁸ / ₁₀	.90 ¹⁰ / ₁₀
1 8-10c. bar iron.....	.77	.92 ² / ₁₀
1 9-10c. bar iron.....	.78 ⁸ / ₁₀	.94
2 c. bar iron.....	.80	.95 ¹⁰ / ₁₀

The footnotes under this scale are unchanged throughout.

With Local Conditions of Last Year.

ADDENDA.

1. Clause 2 was stricken out.
2. Clause 3 of Addenda was changed by inserting busheler in first and second lines.
3. Remainder of clauses same as last year.
4. That the amount of all sizes of iron and steel be placed in weight book within a reasonable time, and placed where all men can inspect it.
5. That rundowns on bar, 12 inch and guide mills be not less than one-third (1-3) of the furnaces; same to be paid by the company.

J. C. Gilchrist, the largest independent operator of vessels on the great lakes, has placed another contract with the American Shipbuilding Company of Cleveland for five steel vessels to cost about \$1,250,000. They will be 400-foot steamers, with a capacity each of about 5600 tons. The dimensions of the vessels are 400 feet over all, 380 feet keel, 50 feet beam and 28 feet deep. They will have triple expansion engines, with cylinders 22, 35 and 58 inches, with 42-inch stroke. They will be fitted with the Hawden hot air system, and will have two Scotch boilers each 13 x 12 feet. The boats will come out for the opening of navigation in 1902. It is not decided where they will be built. Mr. Gilchrist certainly has great confidence in the lake carrying trade. During the past year he has ordered 13 steel steamers, besides buying the three steamers of the Whitney fleet, and upward of 20 wooden vessels. When the new vessels are completed the Gilchrist fleet will include 64 vessels; 16 steel steamers and 48 wooden steamers and consorts.

A statement issued by the American Iron & Steel Association gives the result of statistics received from the manufacturers of Wire Nails, showing that the production of Steel Wire Nails in the United States in 1900 amounted to 7,233,979 kegs of 100 pounds each, as compared with 7,618,130 kegs in 1899, a decrease of 384,151 kegs or something over 5 per cent.

Chicago Machinery Report.

1205 FISHER BUILDING, CHICAGO, July 1, 1901.

It is remarkable that the machinists' strike has thus far not exerted a seriously adverse influence on the Chicago machinery market. The amount of business done in June was about up to that of the previous month. The demand for general machine tools and mill supplies has fallen off somewhat, but some orders for large new equipments which came into the market offset the effects of the strike.

The Marshall & Huschart Machinery Company, 62 to 64 South Clinton street, Chicago, found their June business quite satisfactory, despite the machinists' strike. It seems to have interfered more with the supply of machines than with the demand for them. The company have had to draw on their Cleveland branch for tools needed by customers in this territory. They have equipped a new machine shop of good size at Marion, Ind. The Quincy Engine Works, Quincy, Ill., have now placed the orders for the equipment of their new works, purchasing part from the Marshall & Huschart Machinery Company and part from the Niles Tool Works Company. They further report numerous deals pending for machine tools which make the outlook promising for future business.

McDowell, Stocker & Co., 59 and 61 South Clinton street, Chicago, report that their June trade was fully up to that of May, which was the largest month in their history. They have sold some complete outfits for several small shops, but their trade generally has for the past month come from customers who desire one or two tools. They have found some difficulty in getting machines from manufacturers on account of the strike, but have usually found that the latter had been pretty well stocked when the strike began.

Chas. H. Besly & Co., 10 and 12 North Canal street, Chicago, have only observed the effect of the machinists' strike in particular localities. Their trade, taken as a whole, is so large that it is practically up to their capacity. Any falling off in one locality has been more than made up by an improved demand from other sections. They have not only found a continuously good business in shop supplies, but are also enjoying a sustained demand for their Gardner grinders, Bonanza oil cups, taps and dies and their Helmet oil. Their factory at Beloit, Wis., is still running 22 hours a day, and appears to be making no headway in catching up on shipments. The firm have fixed the price of Bonanza oil cups at a very reasonable rate, which has greatly increased the demand for them.

Armstrong Bros.' Tool Company, 617 to 621 Austin avenue, Chicago, are adding a number of new machine tools to their factory in order to enable them to meet the incoming orders. Their gang planer tools are enjoying a very good demand. They have just received an order from Germany for 25 of them, and another order almost as large from England.

Belting and Mill Supplies.

With some houses this branch of trade has fallen off, while with others the amount of business done in the last four weeks was fully as great as that done in the month of May. One firm reported that there would be a loss of almost \$30,000 in contracts which were to come in, but which had been retarded by the strike.

The Chas. Munson Belting Company, Canal and Washington streets, Chicago, have just added a new department to their plant for the manufacture of raw hide pinions, blanks and gears by the Derma-glutine process. They have received large orders for belting from the Glucose Sugar Refining Company, Western Distillery Company, and the McAleenan Boiler Company, all of Peoria, Ill.

The Moloney-Bennett Belting Company, Washington and Canal streets, Chicago, have received contracts for equipping 15 cotton and gin mills with new belting outfits and supplies, and for re-equipping and repairing a large number of mills in the West and Southwest.

Engines and Boilers.

The demand for heavy engines continues brisk. Inquiries are coming in in large numbers, but few orders

are placed on account of the condition of labor. Heavy engines are at present difficult to be obtained, as the manufacturers are either behind in orders, or are tied up by the machinists' strike.

Joseph T. Ryerson & Son, 18 to 22 Milwaukee avenue, Chicago, report a continued strong demand for the best class of machinery from boiler and tank makers and other manufacturers who use plate working and riveting machinery. The shops of this character, owing to the prosperity which they are enjoying, are fitting up with improved appliances for turning out more work at reduced cost. The tendency in this line is to more generally use pneumatic appliances and in large shops to put in hydraulic riveters. They have recently sold quite a number of hydraulic riveters and have had a very heavy trade in the Lennox, bevel and rotary shears, which have grown to be standard tools in boiler and tank work. The demand for machinery in this line has been so heavy that as large a business has been done in the first six months of this year as had previously been done in two years.

The Hamler Boiler & Tank Company, Thirty-ninth and Halsted streets, Chicago, are completing a smoke stack, 14 x 200 feet, for the South Side Transit Company, Chicago, and have received orders for the construction of 450 oil tanks for the Atchison, Topeka & Santa Fé Railroad Company. The company have recently installed a number of new boiler manufacturing tools, and are now improving their power plant by a 150 horse-power water tube boiler, a 16 x 42 Reynolds-Corliss engine and an air compressor.

The Chris. Pfeifer Boiler Company, Michigan and Franklin streets, Chicago, are having a new shop erected at 60 to 62 Michigan street. The building will be of brick, 35 x 100 feet, and will have a saw tooth roof. The new shop will be equipped with the latest boiler making tools, and will also have a 10-ton crane.

Second Hand Engines and Boilers.

The condition of trade in this line of machinery seems to have improved this month. This class of goods is hard to get, but those who were fortunate enough to obtain a few heavy second hand engines or boilers found ready customers. The inability to obtain new machines has stimulated business, and dealers report that they have received more inquiries and orders this month than during either of the previous two months.

Rainier & Williams, 63 South Canal street, Chicago, have just shipped a 100 horse-power Atlas engine to Mariana, Ark., and a 100 horse-power Ball engine to Kansas City, besides a large number of small engines and boilers in and around Chicago.

Pumping Machinery and Valves.

The demand for all kinds of pumping appliances and valves has been as good, if not better, than that of May. Several large contracts for new pumping stations have been let during the past few weeks. The trade in valves would have been larger than that of the previous month if orders could have been filled. In this particular line the machinists' strike is to be blamed for the condition of trade, which would be far more favorable if labor conditions were normal.

The Chas. F. Elmes Engineering Works, Fulton and Morgan streets, Chicago, are having a good steady trade. Their new hydraulic presses have been enjoying a very good demand, and they recently closed a contract for six of these, together with the pumps, accumulators, &c.

Elevating, Conveying and Power Transmitting Machinery.

The demand for this class of machinery has been as good as expected. None of the larger manufacturers have suffered by the strike, and most of the plants are well filled with work. Some very large orders have been secured, especially for elevators about to be built in the South and West. Special appliances for transmission of power have had an equally good demand. The Chicago manufacturers of this line of appliances are well satisfied with the existing condition of trade.

The Dodge Mfg. Company, 168 South Clinton street, Chicago, report an exceedingly good demand for their

power transmission appliances. The volume of business is keeping up to the record of previous months. They observe much enterprise being displayed both in improving the equipment of old factories and the erection of new ones.

Gas Engines.

The gas engine business continues brisk. The feeling that they are economical and safe is gradually spreading, and this accounts for the increased demand. The inquiries for large machines are still increasing, but those for the small ones do not seem to diminish. Several large shipments have been made during the last month, but it is feared that that class of trade will suffer unless the machinists' strike is settled, as the stock has almost been exhausted, and orders will not be able to be filled. The largest manufacturers of gas engines are tied up by the strike.

The Otto Gas Engine Works, 360 Dearborn street, Chicago, have closed contracts for supplying 15 different coaling stations with Otto gas engines. They have shipped one 40 horse-power and one 60 horse-power special electric gas engine to Fort Wayne, Ind. They have also completed the construction of a large steel water tower for the Pullman Car Company at Denver, Col., and a 100,000-gallon pumping station for the City of Ely, Minn. The company have contracts for 50 more water towers and pumping stations, which must be completed by the end of the season.

Electrical and Mining Machinery.

There seems to be an increased demand for electrical mining machinery of all kinds. Most of the factories making this class of machinery have settled with their machinists, and are working. Some of them have been so busy that additions have had to be made in order to enable them to meet contracts and orders. The bulk of the trade comes from the Central West, and the labor difficulties seem not to have had any negative effect on the amount of business done in this line.

The Goodman Mfg. Company, Halsted street and Forty-eighth place, Chicago, have been forced to add several new large machine tools to accommodate the amount of business which is coming in. Contracts have recently been closed for eight electrical locomotives and for a number of coal cars for mines in Pennsylvania, Virginia and West Virginia.

Miscellaneous.

The Winslow Bros. Elevator & Machine Company, 94 to 100 North Clinton street, Chicago, have just been awarded the contract for the elevator plant for the Tribune Building, Chicago. This will be a 12-story structure, and the contracts include seven hydraulic passenger elevators, one freight elevator, two paper hoists, five paper lifts, three cylinder high duty pumps, tanks and general piping. They have also received orders for two 25-ton ice machines, one 70-ton ice and refrigerating machine, two hydraulic box car loading machines for the Big Fork Coal Company of Montana, and for one passenger and three freight elevators and kindred appliances for the building being erected for J. B. Clow & Sons, Chicago.

The Vulcan Iron Works, Milwaukee avenue and Fulton streets, Chicago, have received an order for a pile driver car, which is to be shipped to Mexico, and another which will go to Europe.

Wm. R. Perrin & Co., Forty-seventh and Loomis streets, Chicago, have received orders for six carloads of beet sugar filter presses for different points in Michigan, Wisconsin and Washington. They are also preparing for shipment 12 coating cylinders for various packing houses in and around Chicago.

The American Copper, Brass & Iron Works, La Salle avenue and Michigan street, Chicago, have been awarded the contract for all the millwright work in the National Brewing Company, McKee's Rocks, Pa., and for all the machinery for the Minneapolis Brewing Company, Minneapolis, Minn., and the German-American Sugar Refining Company, Bay City, Mich.

The Coe Brass Mfg. Company, Torrington, Conn., are building an addition to one of their factories and are also enlarging their office facilities.

St. Louis Machinery Market

St. Louis, Mo., July 1, 1901.

On the whole the machinery business this spring has been far beyond any previous year, but just at present there seems to be a material falling off in trade. This is especially true in several lines of special machines built in cities where the machinists' strike has been most severe. One dealer, in speaking of the immediate outlook, stated that he considered the future particularly bright for machinery. It is thought that the coming 1903 World's Fair will of itself be big enough to counteract any reaction that might overtake the country in general and will sustain the local market in nearly all lines.

The local machinery market is losing much of its old time closeness. The business is being put upon a much higher plane and profits are much better. Dealers in times gone by were wont to sell for the purpose of simply doing business and of extending their field, but a change has come about, principally through the great prosperity that has characterized this field for the past year or two, and to-day St. Louis is nearer the point of being a machinery market than at any time in its history. It is a question, however, as to whether it will ever be looked up to as a leading market, at least for some years, as the country is too new, the small and thickly settled industrial suburbs are lacking and the machinery trade westward is very scattered.

It seems certain that the Machinists' Union is satisfied with the local treatment they have received from the local Metal Trades Association. They are not striking over petty questions. This has been shown in a case at Kupferle Bros. Mfg. Company, where a large number of machinists are employed. The pipe fitters working for this firm entered a grievance two weeks ago, demanding that their pay day be changed from Monday night to Saturday night. This was denied them and consequently they have been on strike for two weeks. They returned to work this morning under the same conditions they left. The other departments of this shop were in full operation during this trouble, and no effort was made to strike by the other trades.

While from all outward appearances the labor troubles here are settled, it appears that under the surface much work is being done by the unions. Many machinery manufacturers have been presented with a letter similar to the following from the local pattern makers: "No member will be allowed to work in any shop where nonunion men are working, and until such men become members or are removed out of shops our members will be called out. Now, if you want to keep our men working you will please inform our business agent, so he will make arrangements to get the number of men wanted for you." It is stated the above will take effect this week.

Maehoning and Shenango Valley Notes.

The new act of the Pennsylvania Legislature abolishing grade crossings in all municipalities except of the first and second class, will prove of much value to the towns of New Castle and Sharon, which have very dangerous grade crossings on some of their busiest streets.

The transfer of molten metal in ladle cars from the blast furnaces to the Shenango steel mill at New Castle was begun on Monday, June 10. The steel company have leased an engine from the Pittsburgh & Lake Erie Railroad to do the shifting of the ladle cars.

The Sharpsville blast furnace, Sharpsville, Pa., which has been out of blast for several months, has resumed. It employs 200 men, and has recently been extensively improved.

Charles E. Green, senior member of the firm of Charles E. Green & Son, manufacturers of Wire Goods, at 93 Passaic street, Newark, N. J., died June 11 at Cambridge, Mass., where he had gone in the hope of benefiting his health. Mr. Green had been established in the Wire Goods business in Newark for the past 22 years.

The Boom in Shipbuilding.

WASHINGTON, D. C., July 2, 1901.—Figures compiled by Commissioner of Navigation Chamberlain show that during the fiscal year ended June 30, 1901, a greater tonnage of vessels of all kinds was built than during any year in the history of the country with the exception of 1854 and 1855, and the steel construction far exceeded that of any previous year. The total number of vessels built and officially numbered during the year was 1173, of 401,285 gross tons, compared with 1058, of 305,677 gross tons, for the previous fiscal year. To this should be added, however, about 20,000 gross tons representing vessels numbered in the closing days of the fiscal year ended June 30, 1900, but documented during the year just closed and 88,331 tons representing unriggered barges, canal boats, &c., so that the total output of the shipbuilding industry for the year exclusive of war vessels of all kinds exceeded 500,000 tons. The maximum record was attained in 1855, when the construction amounted to 583,450 tons.

A significant feature of the figures for the past year is the great increase in the average size of vessels, especially in steel construction. Excluding unriggered barges and canal boats, three-fourths of the new tonnage is comprised in 111 vessels, each of over 1000 gross tons. Of these large vessels the great lakes contributed 40 steel steamers, of 137,312 tons, a tonnage which exceeds the steel steam product of the entire United States for any year before 1899. A considerable number of small steel steamers for ocean navigation have been built on the lakes having a tonnage ranging from 1350 to 2300 tons, and length over all not to exceed 270 feet.

The total steel construction during the year was 121 vessels, of which 104 were steam and 17 sail. Of these vessels 12 sail aggregating 13,752 tons and 51 steam vessels aggregating 90,476 tons were built for the Atlantic and Gulf coasts; 5 sail aggregating 11,236 tons and 46 steam vessels aggregating 136,620 tons were built for the great lakes; 6 steam vessels aggregating 7607 tons were built for the Pacific Coast, and 1 steam vessel of 562 tons for the Western rivers. During the fiscal year 1900 the total number of steel vessels built was 102, all steam, with the exception of 8 sail vessels aggregating 9760 tons built for the Atlantic and Gulf coasts.

The tonnage of ocean steel steamers built on the seaboard during the year amounted to 70,667 tons, divided among 15 vessels, as follows: "Sonoma" (Philadelphia), 6253 tons; "Ventura" (Philadelphia), 6253; "Morro Castle" (Philadelphia), 6004; "Sierra" (Philadelphia), 5989; "Hawaiian" (Chester, Pa.), 5597; "Oregonian" (Chester), 5597; "American" (Chester), 5591; "Esperanza" (Philadelphia), 4702; "Monterey" (Philadelphia), 4702; "El Valle" (Newport News), 4605; "Lyra" (Sparrow's Point), 4417; "Apache" (Philadelphia), 3378; "North Star" (Chester), 3159; "James S. Whitney" (Wilmington), 2707; "Zulia" (Philadelphia), 1713.

The principal ocean steamers were three Spreckels mail steamers, of 18,495 tons, for the San Francisco-Honolulu-Australia mail service; three New York and Cuba Mail steamers, of 15,408 tons, and one Venezuelan Red D steamer of 1713 tons, all built under the ocean mail act of 1891. The remaining ocean steel steamers are for the coasting trade, including three Hawaiian-American steamers, of 16,785 tons, and four Chicago steamers, of 8628 tons, temporarily in transatlantic trade.

The following steel vessels were constructed on the great lakes during the year: "Princeton" (Lorain), 5125 tons; "Rensselaer" (Cleveland), 5124; "Lafayette" (Lorain, Ohio), 5113; "Cornell" (Chicago), 5082; "Frank H. Peavey" (Lorain), 5002; "William L. Brown" (Chicago), 4998; "Mary C. Elpicke" (Chicago), 4998; "Howard L. Shaw" (Wyandotte), 4901; "Simon J. Murphy" (Wyandotte), 4869; "John J. Albright" (Cleveland), 4805; "Walter Scranton" (Cleveland), 4803; "Captain Thomas Wilson" (Port Huron), 4719; "David M. Whitney" (Wyandotte), 4626; "Mauch Chunk" (Buffalo), 4499; "Wilkesbarre" (Buffalo), 4153; "Lake Shore" (West Bay City), 3871; "Gilchrist" (West Bay City), 3871; "Uranus" (Wyandotte), 3748; "Mars" (Wyan-

dotte), 3748; "J. T. Hutchinson" (Cleveland), 3734; "Jupiter" (Lorain), 3719; "Venus" (Lorain), 3719; "Neptune" (Lorain), 3717; "Saturn" (Lorain), 3717; "G. A. Flagg" (West Superior, Wis.), 3062; "Randolph S. Warner" (West Superior), 3062; "Meteor" (Toledo), 2301; "A. B. Wolvin" (Cleveland), 2286; "Paraguay" (Lorain), 2201; "Asuncion" (Lorain), 2196; "Kennebec" (Port Huron), 2183; "Northeastern" (Chicago), 2157; "Northman" (Chicago), 2157; "Northtown" (Chicago), 2157; "Northwestern" (Chicago), 2157; "Puritan" (Toledo), 1547; "Waccamaw" (Toledo), 1359; "Georgetown" (Buffalo), 1358; "Iroquois" (Toledo), 1169; "Argo" (Toledo), 1089.

The Bureau of Navigation is advised that plans are being prepared for the construction of a considerable number of large steel schooners, the limit of size for wooden vessels of this rig having been reached. Twenty-two wooden schooners having a total tonnage of 40,273 were built during the year.

Steel steam dredges, ferry boats, &c., were built during the year as follows: "Mills" (Sparrow's Point), 2525 tons; "Thomas" (Sparrow's Point), 2525; "San Pablo" (San Francisco), 1584; "Tamalpais" (San Francisco), 1554; "Chicago" (Port Richmond, N. Y.), 1334; "West Point" (Newburg, N. Y.), 1328; "John Englis" (Newburg, N. Y.), 1022; "Harry B. Hollins" (Newburg, N. Y.), "Lakewood" (Wilmington), 1016.

Two steel square rigged vessels, the "Astral," 3292 tons, and "Acme," 3288 tons, were built at Bath, Maine, for the oil trade, and six steel barges of 1120 tons each were built at Wilmington, presumably to carry coal.

During the calendar year 1900 Great Britain launched 664 steel steamers, of 1,432,600 tons, and Germany completed 63, of 213,984 tons, nearly all of which were for ocean trade.

W. L. C.

The Sharon Steel Company.

In the description of the plant of the Sharon Steel Company, which we print elsewhere, there was omitted the following account of

The Tin Bar Mill.

The 18-inch tin bar mill, which is located parallel to the billet mill and in the same building, is fed direct from the blooming mill. By means of a conveyor and pusher the blooms are brought into the continuous gravity furnaces, where the reheating takes place. Then the blooms automatically drop on a conveyor, which feeds them into the tin bar mill, where they are reduced and rolled out in six passes up to 90 feet length. After the tin bar leaves the bull head it is carried by means of an Aiken chain conveyor onto the cooling tables, from which, after proper cooling, the tin bars are conveyed to the shearing department. There they are sheared to proper length, collected in cradles, then sealed and by means of a 10-ton electric traveling crane are lifted with the cradle into the railroad cars, which in whole trains are shifted over to the tin plate mill.

Both the tin bar mill and continuous billet mill are driven from one main shaft, which, in turn, is driven by means of 16-foot and 18-foot 52.2-inch rope wheels. The 18-foot rope wheel is keyed on the crank shaft of a 28½ and 56-inch by 60-inch cross compound condensing engine of Buckeye make. All conveyors and tables between the different passes of the tin bar mill are driven by electric slow speed motors.

The hydraulic works at Quinnesec Falls, near Iron Mountain, Mich., was totally destroyed on the 25th ult. by an explosion followed by fire. The cause of the explosion is unexplained. The loss in damaged machinery is estimated at \$200,000. The power for operating the Chapin, Ludington and Hamilton mines was furnished almost entirely by the Quinnesec Falls plant, and its destruction will necessitate the closing down of those mines for some time, throwing over 1000 men out of employment.

The British Admiralty has ordered that in future all battle ships and first-class cruisers not already so fitted are to be provided with wireless telegraph apparatus when they go into dockyard hands.

HARDWARE.

THE peril to manufacturing concerns who guarantee prices finds a striking illustration in connection with the rubber trade. It appears that a company representing a large aggregation of interests, with a capital of \$50,000,000, were able to show a profit of only \$62,000 during the last year, without the payment of any dividends to their stockholders. This result was not occasioned by unsatisfactory business, the volume of which was large and ostensibly at remunerative prices. The prices were, however, guaranteed for the year, and during that period there was remarkable development in the number of competing manufacturers, who undersold the great company, who purported to control the market. A heavy reduction in prices was thus forced, and in carrying out the guarantee it was necessary to pay to their customers a sum sufficient to exhaust practically all the profits of the year's business. Apart from illustrating the difficulties which beset consolidations who aim to control the market, notwithstanding the promise with which they enter upon their career, this experience impresses anew the folly of the policy of guaranteeing prices, which in the Hardware trade is the source of so much demoralization and mischief. The growing sentiment against the practice is an encouraging sign of a disposition on the part of the trade to free itself from unbusinesslike methods and usages, although some of them are of long standing.

Experience has shown that permanent success in manufacturing, especially of the multitudinous articles of Hardware, lies largely in adherence to quality. Those rare instances to the contrary only accentuate the general truth of this statement. Things cheap at once in price and in quality are apt to have a great run for a time, but they do not wear well, and users soon revert to articles that give satisfaction. The Nestor of the Hardware trade has well said that "the remembrance of quality remains long after the price is forgotten." It takes faith to perceive this principle and courage to carry it out, but it is in the long run a wise policy. There must be on the part of the farsighted manufacturer a constant resistance to the incessant cry of some buyers for something cheaper. Those manufacturers who have been weak enough to yield to this demand have paid the penalty in loss of reputation and consequent loss of trade.

Another weakness, even less excusable, of which the Hardware trade furnishes some examples, is that of a manufacturer trading on his reputation, and allowing the quality of his goods to deteriorate in hopes that their good name will gloss it over. Of course the deception is found out sooner or later, and that is the end of the whole business. A reputation for quality once lost is almost impossible to regain.

The duty of the manufacturer does not end with the production of a good article, nor that of the dealer with its purchase. Its merit has to be impressed upon the user, for the reputation of an article depends finally upon the ultimate consumer. Cheap things sell themselves; good things at first introduction require to be sold; after that they take care of themselves better than do the cheap things of inferior quality.

The education of the public to higher ideals of quality is apparently a slow and almost hopeless task when

viewed from one day's progress to another, but if regarded from the vantage point of a few years' effort, and especially in view of the rapidly increasing wealth and intelligence in this country, it presents itself simply as a long headed business policy, and one that is essential to any permanent success. The ultimate user of the goods is the man to aim at. He must be reached, usually through the dealer, with an appeal as to the quality, that will render him a permanent client.

Condition of Trade.

The first half of the year has made for itself a memorable record, in view of the large volume of business and the excellent tone which has characterized the market. Manufacturers in most lines have had a very satisfactory trade at remunerative prices. With the merchants, large and small, a similar condition of things has prevailed. The volume of business both with jobbers and retailers has been large and reasonably profitable. It has not been an era when speculation entered much into the conduct of trade, but merchants have felt safe in their purchases, which have been liberal, to meet the requirements of their customers. Competition with both the retail and wholesale houses has been active, and the changing channels and methods of trade have presented many problems of difficulty. On the whole, the past six months have given to the producers and distributors of Hardware and Iron products an exceptionally favorable opportunity for successful business. All except those handicapped by some unusual circumstances or conditions have done, it may be presumed, a profitable and satisfactory business. It is gratifying to be able to begin the last half of the year with a continuance of prosperous conditions. Trade in practically all branches of business gives evidence of prosperity. The consumption of goods, which absorbs the enormous production of the factories, shows the well-being of the people at large. The crop prospects are excellent, with the probability of a heavy foreign demand. The railroads are, naturally, sharing in the general activity and prosperity. From these propitious conditions the Hardware and Iron trades should be able to secure their share of advantage, especially as there is nothing of grave import in the special features of the market to justify anything but a hopeful view of future business.

Chicago.

(By Telegraph.)

There is a lessening in the demand for Hardware this week, due to natural causes, among which the holiday is probably the most notable. Orders are almost invariably fewer for several days immediately preceding and following a national holiday than either a little earlier or later. There is on the whole no exception this year, though some large factors in the trade say they can see no diminution in volume remarkable for this time of year. Crop reports are also affecting the tone of the market slightly, and while in the extreme Southwest some salesmen are reporting a slackening of demand because of unfavorable weather conditions, exactly the contrary conditions prevail in the Northwest. Jobbers continue to work overtime to keep pace with current orders. A few advances are reported effective July 1 owing to increased cost of material, but prices generally are very steady.

St. Louis.

(By Telegraph.)

The demand for Hardware keeps up in large volume. The excessive hot weather that has prevailed throughout the West for the past two weeks would ordinarily reduce the number of orders from 20 to 30 per cent.

This year is proving an exception and the demand for all kinds of Hardware is active and strong. The heavy trade in Binder Twine, noted in previous reports, continues a feature of the market, and with Twine can be mentioned Builders' Hardware, Stove Pipe, Iron, Barb Wire and general hot weather goods. Refrigerators are almost commanding a premium. Manufacturers are unable to make shipments and jobbers find it almost impossible to fill orders. The crop prospects are excellent. A tremendous wheat crop is assured, and the only thing necessary to assure a satisfactory corn crop is rain. Some parts of the corn belt have already been visited by liberal rain, and unless a drought is experienced in the other sections this year's corn crop will be well up to the standard. Collections are referred to as being satisfactory.

Louisville.

W. B. BELKNAP & Co.—The extreme heat which has prevailed for the last week has doubtless curtailed the production at the mills. At least the manufacturers assure us that this is the fact. It has also in some measure prevented the consumption of iron in the shops, though hardly to the same extent.

The usual talk of labor adjustments to come in July and prospective closing down for longer or shorter periods are used as arguments for specifying now for balances on contracts and what may be needed for the next 30 or 60 days. Leaving this out of account, the mills do not seem specially hungry for orders, as their books seem to be well filled and they are undoubtedly behind in their deliveries on assorted lots. Still wise counsels seem to prevail with them, as among the makers of more ordinary manufactured products, of not advancing prices, though market conditions in certain articles would go more to justify it than has been the case many times when advances have been made and temporarily maintained.

The favorable financial conditions, the abundance of money, not only at money centers, but throughout the country, and the absolute unwillingness of the country to be panic stricken by fire, floods, bank suspensions, Hessian flies, cut worms, &c., give some idea of how sound the condition of business really is.

Wheat is being harvested throughout our State, and with satisfactory results to the farmers. The hay crop is overabundant, while the horses and cattle browsing on the thousand hills, more or less, give promise of good returns to the stock breeding interests in this great agricultural State of Kentucky.

The extraordinary interest manifested in the Convention for Good Roads, which is holding its session in Louisville this week, is another evidence of progress and intelligent prosecution of the interests of the commonwealth, both in the city and country. The full representation noticeable from rural districts, notwithstanding the fact that it is in the middle of harvest time and that many of these men would rather be superintending field operations than sitting and voting, is, as we say, a most cheerful evidence of a desire to promote the common weal by the sacrifice of individual time and effort.

Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—This is rather a quiet time in Hardware circles, June being one of the lightest months in the year with the Hardware jobbers in this section. The extremely warm weather that we have experienced for the past ten days has had a tendency to hold business in check. We are pleased to report, however, that business is fully up to what it has been in former years at this season.

The prospects for the fall trade are unusually fine. The wheat crop, which is now being harvested, and in some instances has already been threshed, is the finest we have had in Tennessee for 20 years. The berry is large and fine, weighing from 58 to 63 pounds to the bushel. Some good crops are opening at 33 bushels to the acre. The corn crop is a little backward, but is looking well. The farmers are all happy over the general prospects of the crops.

We have every reason to believe that when vacations are over and traveling men are back to their old stamping ground that the fall trade will be excellent. There are no recent changes in prices worthy of note.

Philadelphia.

SUPPLEE HARDWARE COMPANY.—This issue of *The Iron Age* finds us in the midst of the midsummer heat, which at this writing is almost intolerable, and leaves but little inclination to the average buyer to make purchases, and, we fear, little inclination on the part of the average salesman on the road to make sales, and the salesmen are disposed to lay off for their midsummer vacation. What trade there will be, therefore, for the present probably will be mail orders until a change in the weather gives some encouragement for harder work.

The past six months have been a wonderful six months in the history of our country, as far as commercial achievements and trade are concerned. We will refrain, however, from touching on anything beyond this until our next semimonthly letter to *The Iron Age*.

St. Paul.

FARWELL, OZMUN, KIRK & Co.—June closes with a very satisfactory showing. There has probably been as little cause of complaint throughout the month on the demand for goods as has ever been experienced. It has been strong and remarkably steady, with no sign of relaxation at any time.

It would have been a great relief all the while to have been able to get into stock the goods that have been short and that have been persistently urged forward, and yet have come so grudgingly. We still believe this feature will grow less troublesome as the time for the lull of harvest comes on, and that August will find stocks in the wholesale houses in very fair condition. It is also to be remembered that such features of the business are likely to be unduly estimated by all concerned. In his desire to fill orders satisfactorily the wholesale man is much more disturbed over his one failure to render good service than he is gratified over the scores of successes that he has scored in filling orders acceptably, and the retail dealer is probably in a similar frame of mind. When one recalls the endless variety of Hardware goods and the difficulty in estimating long ahead the probable demand for them, and then, in addition, as is the case this season, the difficulty of getting goods ordered, he is likely to have a feeling of surprise that orders are filled as well as they are.

Doubtless, upon the whole, the service has improved, and further improvements will be made and the burdens of the Hardwareman will grow less as the years go by. We sometimes wonder what his ills will be who undertakes to be a purveyor of Hardware a century hence, but we give it up.

Portland, Oregon.

CORBETT, FAILING & ROBERTSON.—We have not, as yet, been able to break away from the cold, cloudy and unseasonable weather reported in our last. However, the Government report shows no damage as yet accrued, and in some sections crops have been benefited. The weather in itself is not a stimulant to trade, although it is holding up remarkably well.

To show what the sheep industry is in Oregon, last week one company disposed of their wool clip, 870,000 pounds, at auction, 15 buyers bidding, the entire clip being knocked down to one firm at 12½ cents a pound.

As heretofore reported, the first half of the year closes with a satisfactory volume of trade, and we enter on the second half with confidence that it will make a still better showing than the first.

Omaha.

LEE-GLASS-ANDRESEN HARDWARE COMPANY.—In its general features, the condition of the Hardware trade in the jobbing centers located on the Missouri River presents no changes of importance, and remains in practically the same condition as outlined in our preceding reports. Business in all lines continues to flourish, and the volume of goods daily going into consumption shows no abatement. All accounts agree that the country

tributary is in excellent condition. Reports from the interior indicate a large yield of small grains, while the prospects for a heavy corn harvest are very flattering. Indications all point to a continuance of good trade, and it is predicted that the record of the volume of business for the last six months of the year will prove a record breaker.

NOTES ON PRICES.

Wire Nails.—The demand for Wire Nails is somewhat less active, a condition to be expected at this season. The trade are not disposed to buy beyond their needs. Pittsburgh quotations remain unchanged, as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

To jobbers in carload lots.....	\$2.30
To jobbers in less than carload lots.....	2.35
To retailers in carload lots.....	2.40
To retailers in less than carload lots.....	2.50

New York.—The local market for Wire Nails is without change. Quotations are as follows:
To retailers, carloads on dock.....\$2.53
Small lots at store.....2.60

Chicago, by Telegraph.—The tendency toward an easier condition as regards the Wire Nail supply continues, and prompt shipments are generally possible. Competition is slightly more in evidence, and where this is strikingly manifest there has been an occasional shading of prices. But the regular schedules of prices are firmly maintained otherwise. Consumption is remarkably heavy, with estimates of its continuance through the summer. Carload lots are quoted at \$2.45 and small lots at \$2.55, with a concession to \$2.50 to best buyers.

St. Louis, by Telegraph.—A steady demand for Wire Nails is reported. There is no difficulty in securing prompt shipments and prices are being well maintained. Jobbers quote carload lots to retailers at \$2.55, base, and less than carloads at \$2.60 to \$2.65, base.

Pittsburgh.—The demand for Wire Nails is much smaller now than for some months past. In fact, there is hardly enough demand to take the entire output of the mills, and there is no trouble whatever in getting Nails of any size for prompt shipment. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

To jobbers in carload lots.....	\$2.30
To jobbers in less than carload lots.....	2.35
To retailers in carload lots.....	2.40
To retailers in less than carload lots.....	2.50

Cut Nails.—At a recent meeting of the Cut Nail manufacturers the price for June was reaffirmed for the month of July. It is stated that thus far, including June, the consumption of Cut Nails has exceeded that of last year. The market is represented by the following quotations, f.o.b. Pittsburgh, plus the actual freight to point of destination, terms 60 days, or 2 per cent. off in 10 days:

Carload lots.....	\$2.00
Less than carload lots.....	\$2.05 to 2.10

New York.—The local market is experiencing only a moderate demand for Cut Nails. New York quotations for carload and less than carload lots are based on the above prices, to which Pittsburgh freight has been added:

Carload lots on dock.....	\$2.13
Less than carload lots on dock.....	2.18
From store.....	2.25

Chicago, by Telegraph.—For Cut Nails there is the usual moderate demand, with quotations unchanged at \$2.35 from stock in small lots.

St. Louis, by Telegraph.—There is no change to note in Cut Nails. Demand is fair at \$2.30 to \$2.35, base, for small lots from store.

Pittsburgh.—There is nothing of interest to note in the Cut Nail market, the demand being only moderate. There is still some complaint that established prices on Cut Nails are not being rigidly held. The market is represented by the following quotations, f.o.b. Pittsburgh, plus the actual freight to point of destination, terms 60 days, or 2 per cent. off in 10 days:

Carload lots.....	\$2.00
Less than carload lots.....	\$2.05 to 2.10

Barb Wire.—The mills are still some weeks behind their orders for Barb Wire, while buying continues in unprecedented volume for the season. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

To jobbers in carload lots, Painted.....	\$2.60
To jobbers in carload lots, Galvanized.....	2.90
To jobbers in less than carload lots, Painted.....	2.65
To jobbers in less than carload lots, Galvanized....	2.95
To retailers in carload lots, Painted.....	2.70
To retailers in carload lots, Galvanized.....	3.00
To retailers in less than carload lots, Painted.....	2.80
To retailers in less than carload lots, Galvanized...	3.10

Chicago, by Telegraph.—The gain upon accumulated orders for Barb Wire during the past week has been insignificant if any. Mills are said to be from four to six weeks behind their orders. The buying is widely distributed, and prices are firmly held. Carload lots are quoted at \$2.75 for Painted and \$3.05 for Galvanized. Less than carloads are quoted at \$2.85 and \$3.15, respectively, with a shading of 5 cents to the best trade.

St. Louis, by Telegraph.—The story of the inability of mills to fill orders for Barb Wire has to be repeated. Judging from present indications this condition is likely to exist for some time to come. Prices are firmly maintained. Jobbers quote carload lots of the Painted at \$2.85, and Galvanized at \$3.15. Less than carload lots are quoted at \$2.95 for Painted, and \$3.25 for Galvanized.

Pittsburgh.—Demand continues heavy and the mills making Barb Wire are still much behind in deliveries. For domestic trade we quote: Galvanized Barb Wire, \$2.90 in carload lots to jobbers, and Painted, \$2.60. Terms, 60 days net, 2 per cent. discount for cash in 10 days, f.o.b. Pittsburgh.

Plain Wire.—Conditions in the Plain Wire market have not improved to any great extent. Demand continues large, resulting in delays in shipments. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. off for cash in 10 days:

	Base sizes.	
	Plain.	Galv.
To jobbers in carload lots.....	\$2.25	\$2.65
To jobbers in less than carload lots.....	2.30	2.70
To retailers in carload lots.....	2.35	2.75
To retailers in less than carload lots.....	2.45	2.85

The above prices are for the base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances.

Nos.	Base.	Galvanized
6 to 9.....	\$0.05 advance over base.....	\$0.40 extra
10.....	.10 " " " ".....	.40 "
11.....	.15 " " " ".....	.40 "
12 and 12½.....	.25 " " " ".....	.40 "
13.....	.35 " " " ".....	.40 "
14.....	.45 " " " ".....	.75 "
15.....	.55 " " " ".....	.75 "
16.....	.70 " " " ".....	1.00 "
17.....	.85 " " " ".....	1.00 "

For even weight bundles, 50 pounds and over, 5 cents per bundle advance on above.

Chicago, by Telegraph.—Conditions in the Plain Wire market are practically unchanged. There is a steady demand, so great in volume that mills are making small headway against the accumulated orders. Shipments are necessarily delayed. Carload lots are quoted at \$2.40, base, and small lots from stock at \$2.50, with \$2.45 quoted to the best trade.

Pittsburgh.—The consumption of Plain Wire is enormously heavy and much larger than ever before. For this reason the mills are three to four weeks behind on deliveries. The heavy gauges of Wire are almost impossible to get. We quote:

	Plain.
To jobbers in carload lots.....	\$2.25
To jobbers in less than carload lots.....	2.30
To retailers in carload lots.....	2.35
To retailers in less than carload lots.....	2.45

Galvanized Wire up to No. 14 is 40 cents advance on Plain; Nos. 15 and 16, 75 cents advance, and Nos. 17 and 18, \$1 advance. Terms are 60 days net, with 2 per cent. off for cash in 10 days, f.o.b. Pittsburgh.

Glass.—The local Glass market is devoid of new features. Demand is light, and prices are likely to remain unchanged until more activity is shown on the part of buyers. Jobbers' quotations for domestic Glass are as follows:

	Discount.
Less than car lots, from store.....	80 and 20 %
Carloads, f.o.b. factory.....	85 and 5 %

Tinware, Galvanized Ware, &c.—The manufacturers of Tinware, pieced, stamped and japanned, galvanized and japanned Sheet Iron Goods, are still working in harmony, the prices decided on several weeks ago, covering an average advance of about 10 per cent., being well maintained. The necessary force, supervised by a central authority, are working out a system of prices based on the net figures determined on last month. It is the expectation that a return to the list and discount method will be made, an announcement of which will probably be made within the next week or two, the plan in contemplation being fixed base discounts with extras.

American Screw Company.—With the beginning of the last half of the year the American Screw Company, Providence, R. I., are bringing prominently to the attention of the trade their discounts on the various goods of their manufacture. The quotations on some of the leading lines are as follows:

	Discount.
Flat Head Iron Screws.....	90 %
Round and Oval Head Iron Screws.....	87½ %
Drive Screws.....	90 %
Flat and Round Head Iron or Brass Machine Screws.....	50 %
Fillister Head Iron or Brass Machine Screws.....	40 %
Norway Philadelphia Tire Bolts.....	82½ %
Eagle Philadelphia Tire Bolts.....	85 %
Bay State Tire Bolts.....	77½ %
Flat and Round Head Stove Bolts.....	77½ %
Stove Rods.....	65 %
Sink Bolts.....	77½ %
Rivets, Tinnings, Coopers, &c.....	70 %
Hand Rail Screws.....	60 and 10 %

Paints and Colors.—*Leads.*—The demand for White Lead in Oil is fair, but shows a falling off in comparison with previous weeks. The advance of the season and the extreme hot weather have both combined to produce these results. Quotations are as follows: In lots of 500 pounds and over, 6½ cents; in lots of less than 500 pounds, 7 cents per pound.

Oils.—*Linseed Oil.*—A further advance of 7 cents per gallon in the price of Linseed Oil was announced on July 1. This places the price of City Raw at 77 cents, in lots of five barrels or more, and 78 cents in lots of less than five barrels. Out of town brands of Raw are quoted at 75 to 76 cents, according to quantity. Balled Oil is 2 cents per gallon advance on Raw. Demand continues good, notwithstanding the advance, as purchasers have not generally been buying beyond immediate requirements. It is rumored that the supply of Seed and Oil is limited, and insufficient to supply requirements, at the present rate of consumption, to the next crop season. Under such conditions further advances in price would not be surprising.

Spirits Turpentine.—The Turpentine market has been a declining one, owing in part to lower prices in the South and extreme heat at this point. The local market is dull, according to quantity, at 36½ to 37 cents for Southern, and 37 to 37½ cents for machine made barrels.

THE NORVELL-SHAPLEIGH HARDWARE COMPANY, St. Louis, Mo., have issued an attractive booklet in regard to their organization, policy, plans, &c. It touches on the *personnel* of their company, their new building, St. Louis as a Hardware market, their mail order department, &c.

OUR readers will observe the Special Notice signed "Ambpush" on another page, in which attention is called to a new line of Shelf Hardware. The advertiser is desirous of securing a good house in each State to handle this product and energetically push its sale.

THE CONDITION OF THE RUBBER GOODS TRADE.

DURING the last six months, which has been a period of activity in the factories producing all the lines of rubber goods commonly handled in the Hardware trade and of steady demand for such goods, there has been practically no change in relation to prices.

The Course of the Market.

A few years ago, when the buying demand was less regular and considerably below the normal, manufacturers were disposed to grant any concessions requisite to effect sales. When the continuation of this policy had brought the industry to a point where much business was being done without any profit, a movement was started to advance prices by means of concerted action, but after a year or two the Manufacturers' Association was allowed to fall asleep, owing to the difficulty in enforcing the price agreements entered upon from time to time. It was then formally agreed that, while justice to themselves demanded that manufacturers should advance their prices, it was practically impossible to bring about any uniform advance, and the members mutually promised to do what they could gradually to bring prices to a higher level. Fortunately for the manufacturers the general improvement in trade led to such an increase in the demand for rubber goods that during 1899 there was no trouble in maintaining prices on a profitable basis, and during this year the total production of rubber goods of all kinds in this country eclipsed all former records. The sales were rather above normal, due to the general tendency to fill out depleted stocks, so that during the following year, perhaps, the demand for goods was somewhat smaller, but up to the present time the condition of the industry has been most healthful, and prices have been maintained practically at a level on each staple grade of Belting, Packing, Hose and such like goods.

Many Different Grades.

It will be understood, of course, that there are innumerable grades of rubber goods, due, in the first place, to the fact that there are some 200 or 300 different grades of crude rubber recognized by dealers in this material, and to the further fact that in the use of adulterants to produce grades of goods to meet varying demands as to price there is a very wide range of quality in the production. When a single rubber factory regularly lists 13 brands of Garden Hose at different prices it is not to be expected that the buyer of the lowest priced brand will get an article as durable or flexible as if a higher price was paid. One of the largest factories in the country will accept no order for Garden Hose at less than 10 cents per foot, while, of course, there is an immense trade in Hose much below this figure. It cannot be said, however, that, taking any particular brand as a basis, Hose is any lower or higher in price than last season. There has just been awarded a contract for 18,000 feet of 1-inch three-ply Garden Hose for one of the Chicago parks at 7¼ cents for uncoupled and 8 cents for coupled. These figures are about what was paid for the same class of goods last year, and it may be added that the various bidders for the contract varied very slightly in their figures.

Bicycle Tires.

The Bicycle Tire trade has gradually become narrowed down to a very few factories, who are working under a patent license, and are enabled by practical combination to maintain prices at a higher level than that which prevailed up to two years ago, when nearly every factory was producing goods of this class. Those factories which made a specialty of low grade goods have for the most part given up the production of Bicycle Tires, and their output may soon be expected to disappear from the market.

Vehicle Tires.

The greatest growth in any line of rubber goods production in recent years has been in Vehicle Tires, particularly of the solid variety. It seems probable that ultimately all carriages in cities, and wherever else good

roads exist, will be equipped with rubber. This fact, however, is not likely to be of much direct interest to the Hardware trade, beyond the fact that the constantly increasing demand for rubber for this, as for any other purpose, will have the tendency to keep up the prices of raw material, and, therefore, prevent the possibility of lower figures for such rubber goods as do come within the scope of the Hardwareman's purchases. It may be mentioned here that very many Rubber Horseshoe Pads are being made, and in some cities they have proved ready sellers. There has suddenly grown up, also, a heavy production of Rubber Heels for leather footwear, though the Hardwareman probably will not be able to handle these at an advantage unless he is also able to place the Heels on his customers' shoes.

The demand for rubber for rubber footwear, by the way, continues to be one of the most important factors in the trade. The recent report of the

United States Rubber Company

with \$50,000,000 capital, showing a profit during the last business year of only \$62,000—with the subsequent postponement of all dividends—might seem to indicate a lack of profit in this branch of the industry. But it must be noted that this company guarantee their prices for 12 months in advance, and when, before the end of the business year, the competition of new independent concerns had become formidable, the big company, in order to hold their customers, made a heavy cut in prices which was retroactive, and led to the payment to their customers of very large sums—possibly millions—in rebates. At this time, stimulated by low prices, the volume of orders in the rubber shoe factories exceeds anything in the history of the trade, and the amount of production now in progress is calling for very large shipments of crude rubber. Those people who suppose that very little rubber enters into the production of rubber boots and shoes may be surprised to learn that a single factory near Boston receives annually about 3,500,000 pounds of rubber direct from the Amazon Valley, besides making some purchases in nearer markets. These conditions are referred to on account of their bearing upon the general rubber goods situation, in respect to a heavy demand for the raw material preventing any important decline in prices.

The Supply of Crude Rubber.

It must be understood that the production of rubber in the remote countries whence it is obtained does not respond readily to an increased demand or an advance in price in the consuming markets. Hence an increased activity in the factories means more often a diminution of visible supplies than a stimulation of rubber gathering in the forests.

The rubber production in the Para or Amazon River country, which, by the way, is the most important in the world, is confined to certain seasons, ending about July 1 in each year. The production of the season just closed was barely as large as that for last year, while the demand for rubber was greater, so that stocks show a decrease as compared with one year ago. Not only this, but all indications to-day point to a possibly smaller yield of rubber for the coming season, by reason of the effect of the prevailing financial crisis in the Northern Brazilian States, which has compelled banks and merchants to limit credits and advances, without which it is impossible for the collectors and traders in the remote interior to "move the crop."

In spite of the conditions just quoted, crude rubber for some time past has been sold in the New York and European markets for less than the price at Para, with shipping expenses added. This has been due doubtless to the fact of heavy stocks having been accumulated which the holders were anxious to dispose of, which is not to be wondered at when it is considered that a ton of the best rubber means about \$2000 in money.

The Rubber Market.

On the whole, therefore, the cost of good rubber at this time may be said to be low, compared with the rates which have ruled during much of the time for two years

past. There is no assurance, however, that the raw material will remain low; on the contrary, for reasons above alluded to, conservative manufacturers feel obliged to prepare themselves against an advance in leading rubber grades during the next few months. The price of rubber goods, it may be said, cannot be expected to fall with every decline in the raw material. If a manufacturer has goods in stock in which he has used rubber at \$1 a pound, he cannot very well reduce his prices because the raw material to-day may happen to sell at 85 cents; or it may be that the manufacturer in contracting to make goods has in his stock room unused material bought at a higher price than the quotation for the day, which fact he must consider in fixing the prices for goods yet to be made. The practice is to take the average as the cost of rubber in figuring the cost of production, and buyers must expect to pay about the same price for the same grade all the year around.

The Practice of Consigning Goods.

There is a growing tendency on the part of manufacturers to put a check upon the consignment of goods to jobbers and dealers. Formerly many large concerns seemed ready to ship all the goods which dealers could be induced to accept. This policy came to mean eventually the tying up of large amounts of capital in excessive stocks of goods all over the country, some of which, in the natural course of events, were bound to deteriorate in time, besides which it was claimed—and no doubt with justice in some cases—that the jobber who held goods on consignment was less disposed to see that they were well cared for than if the goods were paid for and any injury meant a loss to the jobber. In these days, when goods can be ordered by telegraph, and can be shipped quickly and cheaply to all parts of the country, less reason exists for sending out goods on consignment, and doubtless the practice soon will become a thing of the past.

The Jobbers' Trade.

Already the jobbing of mechanical rubber goods has almost been done away with, not only retailers, but in many cases large consumers, buying direct from the factory. A single manufacturer near New York, who is neither one of the oldest nor the largest operators in the trade, has on his books the names of over 6000 customers, whereas a few years ago a similar concern would have marketed their output mainly through a few large jobbing houses.

General Conditions.

The past 12 months have witnessed the organization of an unusual number of rubber factories—several in the mechanical goods line—and many of the large old time concerns have increased their capital and expanded their plants, all pointing to the belief that the present satisfactory condition of the industry is likely to continue indefinitely. There have been no failures in the trade, and there are, practically, no idle factories in the country. The factory managements are on the alert to secure the highest class of talent for heads of departments, and everywhere there is an unusually keen interest in regard to improved processes of manufacture. It is not too much to say that the most successful concerns in the industry to-day are those who have prized most highly a reputation for making goods of high grade, or at least for making goods which shall prove to be as they are represented. At the same time that class of salesmanship which succeeds only through cutting prices is falling into disfavor. It is not meant by this that the chance to buy cheap and poor rubber goods will not always be open to people who insist upon having such goods, but the dealer or consumer who wants reliable goods at a fair price was never before so well provided with the opportunity for filling his wants.

Improved Processes.

In regard to new processes, mention must be made of the constant tendency to improvement in the quality of reclaimed rubber, commonly called "shoddy." Without the use of some adulterant the amount of rubber required in making rubber goods would soon send the

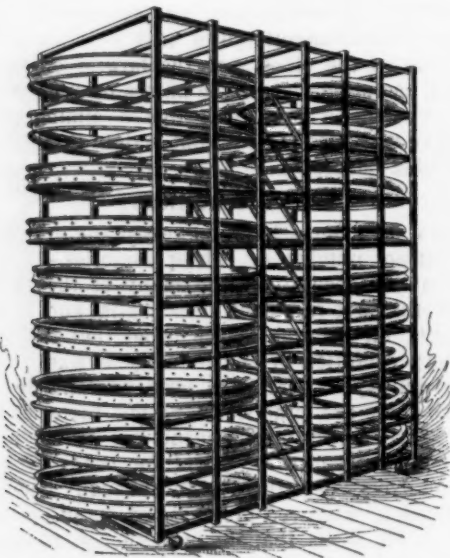
price up to a point which would limit its use in many branches of the industry. For many years rubber reclaimed from worn out goods has been largely used for such an adulterant, its particular merit being that, while not equal to new rubber, it is still rubber, and will amalgamate with the raw material to an extent not true of the so-called "substitutes." Each year has shown an improvement in the processes of reclaiming rubber, and it is possible, no doubt, that there will yet be produced a material from rubber once used that for most purposes, save where elasticity is required, can be given a value practically equal to that which it possessed in its first condition in an article of manufacture.

AMERICAN CAR & SHIP HARDWARE MFG. COMPANY.

THE AMERICAN CAR & SHIP HARDWARE MFG. COMPANY, New Castle, Pa., have succeeded to the properties and good will of the Lynchburg Hardware Mfg. Company and Lynchburg Lock Works, both of Lynchburg, Va., and the Whiting & Rosenberger Company of Aberdeen and Havre de Grace, Md. The business heretofore done by each of the above named companies will be continued by the consolidated concern without interruption, and all unfilled orders now on the books will be executed at the prices originally quoted. This company make Brass and Bronze Trimmings for steam and electric cars, Ship Hardware, Marine Work, Bath and Sanitary Supplies, Electric Push Buttons, Brass, Bronze and Iron Castings, large or small, &c.

BICYCLE RIM AND TIRE RACK.

MORLEY BROTHERS of Saginaw, Mich., have in use in their retail Hardware department the rack shown herewith, which is designed for holding their retail assortment of Rims and Tires. The side of the rack used for Rims is partitioned off from that holding Tires by diagonal braces. The openings through which



Bicycle Rim and Tire Rack.

the Rims are put into the rack are 20 inches in the clear, and the openings through which the Tires are introduced are 22 inches in the clear. The distances between all the shelves are the same, each being $6\frac{1}{2} \times 26$ inches in the clear. The height of the rack, not including the casters, is 42 inches. For the information of those who may wish to construct a rack of this kind we give a list of the material required, as follows:

- 16 pieces $1\frac{1}{2} \times \frac{3}{4}$, 42 inches long.
- 70 pieces $1\frac{1}{2} \times \frac{3}{4}$, 26 inches long.
- 14 pieces $1\frac{1}{2} \times \frac{3}{4}$, 64 inches long.
- 2 pieces 4×1 , 42 inches long.
- 2 pieces 4×1 , 26 inches long.
- 2 pieces 2×2 , 42 inches long.
- 30 feet $1\frac{1}{2} \times \frac{3}{4}$.

The 2×2 pieces, 42 inches long, were triangular in shape, two sides of each triangle measuring 2 inches in width. The 30 feet of $1\frac{1}{2} \times \frac{3}{4}$ stuff was used for the partition in the center of the rack. The rack accommodates nine pairs of Rims and an equal number of pairs of Tires. The rack was gotten up by one of the employees and has proved well adapted to the purpose.

CONTENTS

	Page.
The Sharon Steel Company. Illustrated.....	1
Reciprocity Treaties and Tariff Revision.....	11
A New Design of Coke Oven.....	12
A Mysterious Cupola Explosion.....	12
Swedish Exports of Iron Ore.....	12
The Prentice Gang Drill for Locomotive Work. Illustrated.....	13
The Central Iron & Steel Company.....	13
The United Engineering and Foundry Company.....	13
New Railroad Building for Six Months of 1901.....	14
The Franklin Foundry Cold Saw Cutting Off Machine. Illustrated.....	14
The Tropenas Steel Oil Cup. Illustrated.....	15
The Colorado Fuel & Iron Company.....	15
The Huber System of Shaping Metal Goods by Hydraulic Pressure. Illustrated.....	16
Notes from Great Britain.....	18
The Tin Plate Scale.....	19
Amalgamated Association Arrayed Against United States Steel Corporation.....	20
Obituary.....	21
Lake Iron Ore Matters.....	22
The Machinists' Strike on the Pacific Coast.....	22
Editorials:	
Fresh Capital in the Steel Industry.....	23
The Seventh Week of the Machinists' Strike.....	24
The Philippine, Cuban and Porto Rican Tariffs.....	25
The Molders' Conference.....	25
Information Wanted.....	25
Personal.....	26
The Machinists' Strike.....	26
The Willnot & Hobbs Mfg. Company.....	29
Iron and Industrial Stocks.....	29
Cuyahoga Steel & Wire Company.....	29
The National Steel Company.....	29
The Canadian Niagara Power Company.....	30
The Parkersburg Iron & Steel Company.....	30
Manufacturing:	
Iron and Steel.....	30
General Machinery.....	31
Engines and Boilers.....	31
Buildings and Bridges.....	31
Foundries.....	31
Machine Tools.....	31
Hardware.....	32
Miscellaneous.....	32
The Cramp Steel Company, Limited.....	32
Large Orders for Boilers.....	32
The Brier Hill Coke Company.....	32
The Iron and Metal Trades:	
A Comparison of Prices.....	33
Chicago.....	33
Philadelphia.....	35
Cincinnati.....	35
St. Louis.....	35
Cleveland.....	36
Birmingham.....	36
Pittsburgh.....	36
New York.....	36
Metal Market.....	36
The New York Machinery Market.....	39
The Sheet and Hoop Mill Strike.....	39
The Dayton Strike.....	40
The Amalgamated Scale.....	42
Chicago Machinery Report.....	43
St. Louis Machinery Market.....	43
Mahoning and Shenango Valley Notes.....	43
The Boom in Shipbuilding.....	44
The Sharon Steel Company.....	44
Hardware:	
Condition of Trade.....	45
Notes on Prices.....	47
The Condition of the Rubber Goods Trade.....	48
American Car & Ship Hardware Mfg. Company.....	50
Bicycle Rim and Tire Rack. Illustrated.....	50
Arkansas Retail Hardware Dealers' Association. Portrait.....	51
July Fourth.....	58
Show Window Display. Illustrated.....	53
E. C. Atkins & Co.'s New York City Branch.....	53
Notes on Foreign Trade.....	54
Reports from Export Markets.....	54
Martin Fire Arms Company's New Catalogue.....	56
Business Methods of the Large Corporations.....	56
Bad Accounts.....	57
Price-Lists, Circulars, &c.....	57
Trade Items.....	57
E. T. Fraim's New Catalogue.....	58
Miscellaneous Notes:	
Razors and Razor Handles.....	58
Parker Wire Goods Company.....	58
Winslow's Double Runner Skate. Illustrated.....	58
Chicago High Speed Rotary Washer. Illustrated.....	58
The Matchless Pivot Door Hinge. Illustrated.....	59
The St. Louis Air Rifles. Illustrated.....	59
The Star Postal Scale. Illustrated.....	59
The Secure Seythe Brace. Illustrated.....	59
The M. & M. Combination Staple Puller and Fencing Pliers. Ill.....	60
The Mesker Twentieth Century Fence. Illustrated.....	60
Current Hardware Prices.....	61
Current Metal Prices.....	62

Arkansas Retail Hardware Dealers' Association.

THE second annual meeting of the Arkansas Retail Hardware Dealers' Association was held in Hot Springs, Ark., on the 19th and 20th ult. Those present at the meeting were as follows:

E. W. Horne, Forrest City.
J. M. Pitman, Prescott.
E. E. Mitchell, Morrillton.
I. P. Rudolph, Arkadelphia.
W. M. Graham, Clarendon.
R. P. Graham, Fordyce.
H. E. Kyler, Eldorado.
W. A. Jackson, Cardanella.
J. F. Maxey, Ozark.
J. P. Simpson, Malvern.
P. J. Tidwell, Buckner.
J. A. Plummer, Marianna.
W. L. Babcock, Hot Springs.
Frank Stearns, Hot Springs.
Mr. Whittington, Hot Springs.
Hamp Williams, Hot Springs.
T. G. Evans, Hot Springs.
Harry Vaughan, Hot Springs.
Morice Williams, Hot Springs.
John Dickerson, Hot Springs.

R. F. Roys, Russellville.
T. B. Stewart, Newport.
D. L. Graves, Arkadelphia.
K. G. McRea, Hope.
Mr. Wingfield, Hope.
Geo. R. Belding, Hot Springs.
Jullian C. Brown, Hot Springs.
D. G. Fones, Little Rock.
J. Van Dokkum, Little Rock.
W. A. Cook, Little Rock.
J. H. Martin, Little Rock.
Mr. Lyons, Little Rock.
Mr. Hayes, Little Rock.
Mr. Bishop, Little Rock.
Mr. Corrington, Little Rock.
J. H. Bolcourt, Little Rock.
Mr. Gladding, Memphis, Tenn.
Mr. Jackson, Indianapolis, Ind.
M. L. Corey, Argos, Ind.

Quite a number of the members were accompanied by their wives.

The meeting was called to order at 2 p.m. on the 19th, President Horne in the chair. The opening prayer was offered by Rev. Jullian C. Brown of the Methodist Church.

President Horne introduced Hon. Geo. R. Belding, Mayor of Hot Springs, who referred to the position that the Hardware dealers in Arkansas and other States took as regards improvements and progress. He, in behalf of the citizens of Hot Springs and the local members, extended a hearty welcome to the city. J. M. Pitman in a happy vein responded and in behalf of the association accepted the many courtesies offered to the members during their stay.

President Horne in his annual address reviewed the steps taken to bring about the organization, and the success it was meeting, and said that much good to the members and the trade must result from it.

Secretary's Report.

Secretary Plummer in his report showed the membership on June 13, 1900, was 40. He had since received applications for membership, duly indorsed, of 14 dealers, thus making the membership 54, an increase of 33 per cent. His financial report showed a total collection of \$185 and disbursements of \$53.75, with bills to be allowed at this meeting amounting to \$70.25, leaving a balance in hand after paying expenses of \$60.50.

National Retail Hardware Dealers' Association.

M. L. Corey of Argos, Ind., secretary of the National Retail Hardware Dealers' Association, addressed the meeting. He outlined the work undertaken by the National Association and argued the necessity of all State associations joining it. Mr. Corey answered satisfactorily many questions put to him by the members as to State and National associations. His address was well received, and he made it plain that it was the duty of the retail dealers in Arkansas to join an association, and convinced the most skeptical that the State Association should become members of the National. At the close of Mr. Corey's address and after some discussion by the members, the following resolution, introduced by John M. Pitman of Prescott, was unanimously adopted:

Resolved, That the Arkansas Retail Hardware Dealers' Association become members of the National Retail Hardware Dealers' Association.

The chair appointed the following Nominating Committee: W. M. Graham, W. A. Jackson, J. P. Simpson, J. H. Bolcourt and R. F. Roys. T. G. Evans was appointed sergeant-at-arms.

At the suggestion of Mr. Corey the chair appointed a committee of two to attend to questions for the Question Box and to designate what questions should be discussed only in executive session. The chair appointed

J. F. Maxey and J. P. Rudolph. On motion the association adjourned to convene Thursday, June 20, at 8.30 a.m.

SECOND DAY'S SESSIONS.

Harry Vaughan of Babcock Hardware Company, Hot Springs, notified the association that the Committee of Arrangements had arranged for a hop and social at the Arlington Hotel, and extended a hearty welcome to the members and visitors. John H. Martin of the Martin Arms Company of Little Rock, as chairman of the Little Rock delegation, invited the association and its visitors to join them in a tally-ho party, and at the same time requested the association to hold its next meeting in that city.

The Steps Necessary to Make a Success of the Hardware Business.

The following paper with the above title was then read by E. E. Mitchell of Morrillton:

We living at Morrillton know nothing of the trials and tribulations of trying to make a success of the Hardware business in the average Arkansas town. We suggest, however, the first step necessary to make a success



E. W. HORNE, Ex-President.

of the Hardware business is to get a good location, find a good town like Morrillton, of about 2000 people with only one railroad and not over five hardware houses, and the battle is half won. After you have found a good location we make the following additional suggestions:

KEEP YOUR OWN COUNSEL.

We think that is one of the first things a successful man learns. Don't relate your ups and downs to your neighbor. The world is apt to magnify your success or credit for more success than you are entitled to. If you make known your failures to them they are likely to make it worse than what it really is.

TRAVELING MEN.

Be pleasant and courteous to them, and when they call make them feel that they are welcome visitors. Don't give them what is termed the "marble heart." A merchant makes a mistake by mistreating the traveling man. They are among our best friends. Try and find time to see them and hear what they have to offer. Draw them out on their different lines and they will tell you some things you do not know.

PATTERNING AFTER OTHERS.

We are apt to make a mistake by patterning after others. If we see a good thing, look into it carefully to see if it will be any addition to your business before adopting it. I have seen methods used successfully by the originator of them and yet these same methods seem to be failures in the hands of others; or successful meth-

ods in one town may fail in another town. If we all think and work out our own methods of conducting our business by adding this or that man's ideas that seem adapted to our trade and conditions, after examining into them closely, the effort it requires to do this will make us strong in executing our plans. We should study closely and try to understand what is necessary to reach our own trade.

IRONCLAD PRICES.

Again, I think it bad policy to have an ironclad price. Require your clerks to maintain as near as possible a uniform price. But certain customers and conditions require a different price from others; and the argument commonly used in favor of one price, "Every man's money is the same" does not cover the case.

ALLOW CLERKS

as much latitude in making sales and arranging stock as you find their judgment is entitled to. Every man has some originality. Make suggestions to them, but force them to use their own heads, and they are likely to make sales that you would have lost, or make some nice displays that you would not have thought of. And when they have made nice sales, or arranged certain displays, speak nicely of it. Don't wait until they have made a mistake and then "jack them up" about it. There is more in the impression made on your customer's mind by having your stock properly kept and displayed, followed up by the efforts of good salesmen, than there is in the particular line, style or brand of goods you carry.

We do not wish to be understood as being opposed to system. On the contrary, the more system, the more success. But a long list of ironclad rules and a lot of red tape are by no means system. System makes rules and red tape, but they do not always make system. Get a good cash register. It will introduce more system into your business to the square inch than anything I know of. It tells when your store opened in the morning, it shows your daily, monthly or yearly sales, how many customers you had, and how much each bought, and how much each clerk sold, and many other things of interest and value. Your clerks have to be careful with it, which makes them more careful and accurate in other things.

SPECIAL BRANDS.

We are friendly to special brands that contain merit, when they can be controlled by a retailer in his town; but not those that you can only speak of as being as good as some factory brand already introduced. We think, though handling a special brand that has merit and talking points over the factory brand, that it is best to have a factory brand, too. Not to have it often creates the impression on your customer's mind that you urge the special brand because you haven't the other, and that you buy it because it is cheaper than the factory brand. Show the brand you control and talk up its merits. If your customer urges the factory brand on you, get it out and make a comparison.

GOOD GOODS.

Establish a reputation for handling the best goods, and you will get the best line of customers. When you have a call for an article do not show the cheapest thing, but something good and name the price in a manner that gives the customer to understand you think it cheap for the article you are showing him. If he objects to the price or speaks of having been offered something cheaper, &c., then it is time enough to get out the cheaper article. When he sees the two together and you show him the advantages of the good article, and the disadvantages of the cheaper article, he is apt to take the best, which is better for the merchant, even at the same profit to him, for the customer is likely to forget the price he paid. But if the article he buys is worthless he never forgets it, though you may have sold it to him for less than cost.

NEW GOODS.

While we do not think it wise to drop some things you have a good trade on to take up a new article in its stead, yet we should keep our eyes open and when new and attractive articles are offered take them and run

them while they are new. Aside from the profit you make it shows your customers you are in the lead and not following; that they do not have to send off for the latest and best things; that they can always see something new at your store.

CATALOGUE HOUSES

Catalogue houses are one of the growing evils that we have to meet, and just how to meet them is a great question. We believe that the less said about them to our customers the better. We think we should examine closely the latest and largest catalogues of those operating in our territory, study their plan of doing business and locate their weak points, and by no means handle anything through them. That is an acknowledgment no merchant can afford to make.

EXAMINE OURSELVES.

We read some remarks from E. C. Simmons, one of the greatest Hardware men in the world, that struck us very forcibly. The language we do not remember, but the idea was this as we got it: If your business was not moving as you thought it should, examine yourself, see if you are doing everything in your own power to make it a success, and if you should find at any time it is necessary to cut expenses by reducing salaries, begin with your own. I have yet to see the first man who failed in business to acknowledge that he was wholly to blame. He may have been drunk three-fourths of his time, played poker seven nights in the week, spent half his time around a bucket shop, played the races, slot machines or any old thing, yet when he goes to tell you why he failed in business he seems to have forgotten all these things, and will tell you of things that went wrong over which he had no control. However, we think if there is any drinking or gambling to be done the head of the house should do it all and then get out of business as quick as he can after these conditions arise, because drinking or gambling will wreck any business whether done by boss or boys.

Definition of Hardware Dealer.

The following resolution was introduced, and its passage recommended by the Committee on Resolutions:

"Resolved, That the definition of who is a retail Hardware dealer, as outlined by the by-laws of the National Retail Hardware Dealers' Association, be adopted as one of our by-laws."

The association adjourned until 2 p.m.

At the Afternoon Session

the Nominating Committee reported the following selections:

President, Jno. M. Pitman, Prescott.
First vice-president, J. F. Maxey, Ozark.
Second vice-president, T. B. Stewart, Newport.
Secretary-Treasurer, J. A. Plummer, Marianna.
Members of Executive Committee for two years:
Hamp Williams, Hot Springs.
J. H. Bolcourt, Little Rock.
J. W. Lee, Fordyce.

The chair appointed W. A. Jackson and W. M. Graham tellers. Upon the vote being taken the above officers were unanimously elected. Mr. Pitman, upon taking the chair as president, thanked the association for the honor conferred and made a sharp and pointed address, stating that his idea of the association was that it was strictly a business association, and that he hoped, with the assistance of his brother officers and the members, to make the organization a strong one and one through which many benefits would come to the retail Hardware dealers of Arkansas.

On motion the Membership Committee was made to consist of five members, and its duties to assist the officers in procuring new members for the association.

The president appointed the following standing committees:

MEMBERSHIP COMMITTEE.
D. E. Watson, Hamburg. W. A. Jackson, Dardanelle.
C. T. Rosenthal, Hayesville. K. G. McRea, Hope.
D. H. Miller, Van Buren.
GRIEVANCE COMMITTEE.
J. A. Plummer, Marianna. E. W. Horn, Forrest City.
W. M. Graham, Clarendon.
COMMITTEE ON FRATERNAL RELATIONS.
I. P. Rudolph, Arkadelphia. W. B. Pillow, Helena.
F. L. Curfman, De Queen.

COMMITTEE ON TRANSPORTATION.

F. C. Stearns, Hot Springs. J. H. Bolcourt, Little Rock.
F. B. Gregg, Little Rock.

PROGRAMME COMMITTEE.

E. E. Mitchell, Morrillton. W. L. Babcock, Hot Springs.
R. P. Graham, Fordyce.

On motion the president was appointed a delegate to the National Association.

Question Box.

Some of the questions from the question box were read, and the discussions participated in by quite a large percentage of the members. Among the questions were the following:

"What do you think of the new law against range, vehicle and other peddlers?"

"What is the best plan to be sure that a salesman puts all the cash he receives in the till?"

"Is the giving of premiums for purchases advisable, and if so, what is the best method?"

"Is the distribution of calendars and souvenirs a judicious system of advertising? if so, what is the best method of distribution?"

On motion a committee, consisting of J. A. Plummer, D. L. Graves and W. A. Jackson, was appointed to draft resolutions of thanks to the citizens of Hot Springs, the local Committee of Arrangements, the local membership, the Arlington Hotel, the several railroads and the local press for favors shown, and to the Little Rock delegates for favors and invitations extended the association.

On motion M. L. Corey, secretary of the National Retail Hardware Dealers' Association, was by a rising vote tendered a vote of thanks for his presence at the meeting and the assistance rendered by him. A vote of thanks was on motion tendered the retiring president, E. W. Horne. The next meeting will be held at Little Rock, Ark., on the third Wednesday in June, 1902.

JULY FOURTH.

WILTON, N. H., will this year have a special Fourth of July celebration, for which elaborate plans have been made. We have received a copy of the programme of the occasion, in which a conspicuous place is given to the following poem by D. E. Proctor, a local Hardware merchant:

Let the Eagle scream,
Let America rejoice,
Let the Horribles parade,
Let's fill the town with noise,
Let the drums beat out,
Let the small boy shout,
Let the cannon roar,
Let the flag float higher,
Let go the rocket's fire,
Let no enemy come nigher,
Let's fence the earth with wire
From PROCTOR'S store.

BEMIS & CALL HARDWARE & TOOL COMPANY, Springfield, Mass., have begun work on a new mill and office building adjoining their present No. 2 mill on South street, built in 1898. The new structure will be a model mill in every particular, built and fitted up in accordance with the most modern ideas, especially with reference to lighting and protection from fire. The new building will probably not be occupied for five or six months. This will mean no increase in force employed, but merely better facilities and more room, the concern being badly cramped in their present quarters. The mill which now contains the tools and heavy machinery is too light for such work. It will be used as a storehouse or for light work. The mill will be 146 feet long by 61 feet wide. The first section, which will be built as a continuation of the present No. 2 mill, will be three stories in height, to correspond with the older building. The second section, extending back onto higher ground, will be two stories in height and 114 feet in length. The office building will be situated on the south side of the present No. 2 mill, and will be two stories in height. It is to be treated in the classic style.

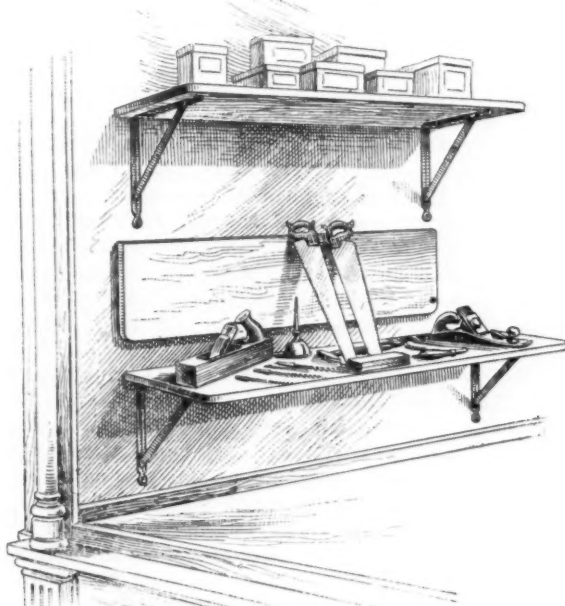
SHOW WINDOW DISPLAY.

The trade are invited to contribute information in regard to methods which have proved satisfactory, with descriptions of attractive displays. Inquiries also are solicited, to which careful attention will be given.

FOLDING WINDOW SHELVES.

The successful window dresser always aims to present goods in an attractive and varied way, and he seeks to make use of all the means by which the goods can be most advantageously shown.

The use of shelves on the side and the back walls of the window inclosure is generally believed to be a good way to utilize this wall space and turn it to the account of live advertising. These walls would be more used in this way were it not that the ordinary shelf bracket and its attached shelf are not easily removed from the walls. To avoid the necessity of removing brackets and shelves some dealers have hinged shelves that are



Use of Folding Shelves on Side Wall of Show Window.

let down by removing a brace, and others use a folding bracket, such as is shown in the illustration. This bracket is made by the Griffin Mfg. Company, Allegheny, Pa., for this purpose, and is complete in itself with hinges, brace and everything necessary. It is claimed by the manufacturers that it can be operated almost instantaneously and can be put up by any one able to use a Screw Driver. In operation, when it is desired to let the shelf down, the shelf is raised slightly and at the same time the braces are pressed in. The shelf can then be lowered against the wall. Lifting up the shelf automatically locks it into position again. The Brackets are made of steel plates in sizes for shelves from 8 to 18 inches wide, and it is stated they will carry a load of 500 pounds per pair.

E. C. ATKINS & CO.'S NEW YORK CITY BRANCH.

E. C. ATKINS & CO., Indianapolis, Ind., have decided to locate their new Eastern branch house at 64 Reade street, New York city, where they will carry a full and complete stock of every kind of Saws and Saw Tools manufactured by them, including Circulars, Bands, Cross Cuts, Hand, Wood, Compass, Pruning and other Saws. On account of their fast growing trade in the Eastern States they have for some time past felt the need of taking better care of this business, so that the stock which they carry in New York will be a great convenience to their Eastern customers and also enable them to look after their prosperous export trade to better advantage. A cordial invitation is extended by the company to all their friends to make their headquarters in the New York office whenever they are in that city.

ods in one town may fail in another town. If we all think and work out our own methods of conducting our business by adding this or that man's ideas that seem adapted to our trade and conditions, after examining into them closely, the effort it requires to do this will make us strong in executing our plans. We should study closely and try to understand what is necessary to reach our own trade.

IRONCLAD PRICES.

Again, I think it bad policy to have an ironclad price. Require your clerks to maintain as near as possible a uniform price. But certain customers and conditions require a different price from others; and the argument commonly used in favor of one price, "Every man's money is the same" does not cover the case.

ALLOW CLERKS

as much latitude in making sales and arranging stock as you find their judgment is entitled to. Every man has some originality. Make suggestions to them, but force them to use their own heads, and they are likely to make sales that you would have lost, or make some nice displays that you would not have thought of. And when they have made nice sales, or arranged certain displays, speak nicely of it. Don't wait until they have made a mistake and then "jack them up" about it. There is more in the impression made on your customer's mind by having your stock properly kept and displayed, followed up by the efforts of good salesmen, than there is in the particular line, style or brand of goods you carry.

We do not wish to be understood as being opposed to system. On the contrary, the more system, the more success. But a long list of ironclad rules and a lot of red tape are by no means system. System makes rules and red tape, but they do not always make system. Get a good cash register. It will introduce more system into your business to the square inch than anything I know of. It tells when your store opened in the morning, it shows your daily, monthly or yearly sales, how many customers you had, and how much each bought, and how much each clerk sold, and many other things of interest and value. Your clerks have to be careful with it, which makes them more careful and accurate in other things.

SPECIAL BRANDS.

We are friendly to special brands that contain merit, when they can be controlled by a retailer in his town; but not those that you can only speak of as being as good as some factory brand already introduced. We think, though handling a special brand that has merit and talking points over the factory brand, that it is best to have a factory brand, too. Not to have it often creates the impression on your customer's mind that you urge the special brand because you haven't the other, and that you buy it because it is cheaper than the factory brand. Show the brand you control and talk up its merits. If your customer urges the factory brand on you, get it out and make a comparison.

GOOD GOODS.

Establish a reputation for handling the best goods, and you will get the best line of customers. When you have a call for an article do not show the cheapest thing, but something good and name the price in a manner that gives the customer to understand you think it cheap for the article you are showing him. If he objects to the price or speaks of having been offered something cheaper, &c., then it is time enough to get out the cheaper article. When he sees the two together and you show him the advantages of the good article, and the disadvantages of the cheaper article, he is apt to take the best, which is better for the merchant, even at the same profit to him, for the customer is likely to forget the price he paid. But if the article he buys is worthless he never forgets it, though you may have sold it to him for less than cost.

NEW GOODS.

While we do not think it wise to drop some things you have a good trade on to take up a new article in its stead, yet we should keep our eyes open and when new and attractive articles are offered take them and run

them while they are new. Aside from the profit you make it shows your customers you are in the lead and not following; that they do not have to send off for the latest and best things; that they can always see something new at your store.

CATALOGUE HOUSES

Catalogue houses are one of the growing evils that we have to meet, and just how to meet them is a great question. We believe that the less said about them to our customers the better. We think we should examine closely the latest and largest catalogues of those operating in our territory, study their plan of doing business and locate their weak points, and by no means handle anything through them. That is an acknowledgment no merchant can afford to make.

EXAMINE OURSELVES.

We read some remarks from E. C. Simmons, one of the greatest Hardware men in the world, that struck us very forcibly. The language we do not remember, but the idea was this as we got it: If your business was not moving as you thought it should, examine yourself, see if you are doing everything in your own power to make it a success, and if you should find at any time it is necessary to cut expenses by reducing salaries, begin with your own. I have yet to see the first man who failed in business to acknowledge that he was wholly to blame. He may have been drunk three-fourths of his time, played poker seven nights in the week, spent half his time around a bucket shop, played the races, slot machines or any old thing, yet when he goes to tell you why he failed in business he seems to have forgotten all these things, and will tell you of things that went wrong over which he had no control. However, we think if there is any drinking or gambling to be done the head of the house should do it all and then get out of business as quick as he can after these conditions arise, because drinking or gambling will wreck any business whether done by boss or boys.

Definition of Hardware Dealer.

The following resolution was introduced, and its passage recommended by the Committee on Resolutions:

"Resolved, That the definition of who is a retail Hardware dealer, as outlined by the by-laws of the National Retail Hardware Dealers' Association, be adopted as one of our by-laws."

The association adjourned until 2 p.m.

At the Afternoon Session

the Nominating Committee reported the following selections:

President, Jno. M. Pitman, Prescott.
First vice-president, J. F. Maxey, Ozark.
Second vice-president, T. B. Stewart, Newport.
Secretary-Treasurer, J. A. Plummer, Marianna.
Members of Executive Committee for two years:
Hamp Williams, Hot Springs.
J. H. Bolcourt, Little Rock.
J. W. Lee, Fordyce.

The chair appointed W. A. Jackson and W. M. Graham tellers. Upon the vote being taken the above officers were unanimously elected. Mr. Pitman, upon taking the chair as president, thanked the association for the honor conferred and made a sharp and pointed address, stating that his idea of the association was that it was strictly a business association, and that he hoped, with the assistance of his brother officers and the members, to make the organization a strong one and one through which many benefits would come to the retail Hardware dealers of Arkansas.

On motion the Membership Committee was made to consist of five members, and its duties to assist the officers in procuring new members for the association.

The president appointed the following standing committees:

MEMBERSHIP COMMITTEE.
D. E. Watson, Hamburg. W. A. Jackson, Dardanelle.
C. T. Rosenthal, Haycocks. K. G. McRea, Hope.
D. H. Miller, Van Buren.
GRIEVANCE COMMITTEE.
J. A. Plummer, Marianna. E. W. Horn, Forrest City.
W. M. Graham, Clarendon.
COMMITTEE ON FRATERNAL RELATIONS.
I. P. Rudolph, Arkadelphia. W. B. Pillow, Helena.
F. L. Curfman, De Queen.

COMMITTEE ON TRANSPORTATION.

F. C. Stearns, Hot Springs. J. H. Bolcourt, Little Rock.
F. B. Gregg, Little Rock.

PROGRAMME COMMITTEE.

E. E. Mitchell, Morrilton. W. L. Babcock, Hot Springs.
R. P. Graham, Fordyce.

On motion the president was appointed a delegate to the National Association.

Question Box.

Some of the questions from the question box were read, and the discussions participated in by quite a large percentage of the members. Among the questions were the following:

"What do you think of the new law against range, vehicle and other peddlers?"

"What is the best plan to be sure that a salesman puts all the cash he receives in the till?"

"Is the giving of premiums for purchases advisable, and if so, what is the best method?"

"Is the distribution of calendars and souvenirs a judicious system of advertising? If so, what is the best method of distribution?"

On motion a committee, consisting of J. A. Plummer, D. L. Graves and W. A. Jackson, was appointed to draft resolutions of thanks to the citizens of Hot Springs, the local Committee of Arrangements, the local membership, the Arlington Hotel, the several railroads and the local press for favors shown, and to the Little Rock delegates for favors and invitations extended the association.

On motion M. L. Corey, secretary of the National Retail Hardware Dealers' Association, was by a rising vote tendered a vote of thanks for his presence at the meeting and the assistance rendered by him. A vote of thanks was on motion tendered the retiring president, E. W. Horne. The next meeting will be held at Little Rock, Ark., on the third Wednesday in June, 1902.

JULY FOURTH.

WILTON, N. H., will this year have a special Fourth of July celebration, for which elaborate plans have been made. We have received a copy of the programme of the occasion, in which a conspicuous place is given to the following poem by D. E. Proctor, a local Hardware merchant:

Let the Eagle scream,
Let America rejoice,
Let the Horribles parade,
Let's fill the town with noise,
Let the drums beat out,
Let the small boy shout,
Let the cannon roar,
Let the flag float higher,
Let go the rocket's fire,
Let no enemy come nigher,
Let's fence the earth with wire
From PROCTOR'S store.

BEMIS & CALL HARDWARE & TOOL COMPANY, Springfield, Mass., have begun work on a new mill and office building adjoining their present No. 2 mill on South street, built in 1898. The new structure will be a model mill in every particular, built and fitted up in accordance with the most modern ideas, especially with reference to lighting and protection from fire. The new building will probably not be occupied for five or six months. This will mean no increase in force employed, but merely better facilities and more room, the concern being badly cramped in their present quarters. The mill which now contains the tools and heavy machinery is too light for such work. It will be used as a storehouse or for light work. The mill will be 146 feet long by 61 feet wide. The first section, which will be built as a continuation of the present No. 2 mill, will be three stories in height, to correspond with the older building. The second section, extending back onto higher ground, will be two stories in height and 114 feet in length. The office building will be situated on the south side of the present No. 2 mill, and will be two stories in height. It is to be treated in the classic style.

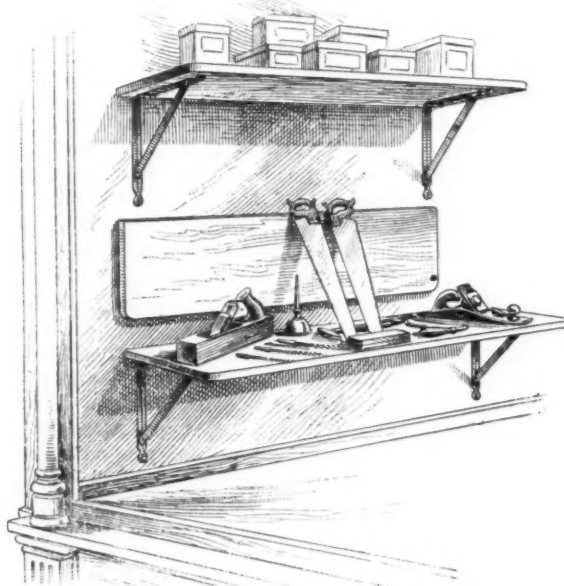
SHOW WINDOW DISPLAY.

The trade are invited to contribute information in regard to methods which have proved satisfactory, with descriptions of attractive displays. Inquiries also are solicited, to which careful attention will be given.

FOLDING WINDOW SHELVES.

The successful window dresser always aims to present goods in an attractive and varied way, and he seeks to make use of all the means by which the goods can be most advantageously shown.

The use of shelves on the side and the back walls of the window inclosure is generally believed to be a good way to utilize this wall space and turn it to the account of live advertising. These walls would be more used in this way were it not that the ordinary shelf bracket and its attached shelf are not easily removed from the walls. To avoid the necessity of removing brackets and shelves some dealers have hinged shelves that are



Use of Folding Shelves on Side Wall of Show Window.

let down by removing a brace, and others use a folding bracket, such as is shown in the illustration. This bracket is made by the Griffin Mfg. Company, Allegheny, Pa., for this purpose, and is complete in itself with hinges, brace and everything necessary. It is claimed by the manufacturers that it can be operated almost instantaneously and can be put up by any one able to use a Screw Driver. In operation, when it is desired to let the shelf down, the shelf is raised slightly and at the same time the braces are pressed in. The shelf can then be lowered against the wall. Lifting up the shelf automatically locks it into position again. The Brackets are made of steel plates in sizes for shelves from 8 to 18 inches wide, and it is stated they will carry a load of 500 pounds per pair.

E. C. ATKINS & CO.'S NEW YORK CITY BRANCH.

E. C. ATKINS & CO., Indianapolis, Ind., have decided to locate their new Eastern branch house at 64 Reade street, New York city, where they will carry a full and complete stock of every kind of Saws and Saw Tools manufactured by them, including Circulars, Bands, Cross Cuts, Hand, Wood, Compass, Pruning and other Saws. On account of their fast growing trade in the Eastern States they have for some time past felt the need of taking better care of this business, so that the stock which they carry in New York will be a great convenience to their Eastern customers and also enable them to look after their prosperous export trade to better advantage. A cordial invitation is extended by the company to all their friends to make their headquarters in the New York office whenever they are in that city.

Notes on Foreign Trade

BRITISH LETTER.

Offices of *The Iron Age*, HASTINGS HOUSE, }
NORFOLK STREET, LONDON, W. C. }

Removed to Larger Premises.

ONE of the enterprising American firms in London who transact not only an agency but also a jobber's business, is that of John G. Rollins & Sons, whose New York premises are in Whitehall street. For some time past the firm have been established at 35, Shoe Lane, London, E. C., and now they have removed to much larger premises at 124, Holborn, E. C. John G. Rollins started business in this country so far back as 1866, latterly making his headquarters in New York. In 1896 he took into partnership his two sons, John G. Rollins, Jr., and Warren D. Rollins. The English business has for some time past been under the control of Warren D. Rollins. From 1866 to 1885 John G. Rollins, Sr., was one of the most prominent American merchants in London. It goes without saying he made himself familiar with the requirements of the English market, with the result that his firm now handle a number of articles, particularly Edged Tools, for which there is a large and growing sale over here. Warren D. Rollins, who now has charge of the English business, was trained in the offices of the Enterprise Mfg. Company of Philadelphia, Pa., and the Yale & Towne Mfg. Company of Stamford, Conn. The result is that between father and son there is an excellent understanding, and a combination of business attributes that should go far. In addition to Edged Tools the firm are selling largely Black Diamond Files, Bolts and Nuts, Agricultural Implements, Lamps, Wood Ware and Domestic Hardware. I am afraid Warren D. Rollins finds it difficult to keep the American Lamp trade going, as from all I hear German Lamps, particularly in the cheaper lines, are gaining ground everywhere. Particularly is this true where stamping work is called into requisition. If American Lamp manufacturers want to hold this trade they have got to come down in price. In the better qualities they are more than holding their own, several very pretty Lamps at the present moment being popular in England. The new premises in Holborn are not only admirably situated, so far as offices are concerned, but the show room is splendidly adapted for its purpose. It is very light, is nicely decorated and very enticing. I imagine the London house will not refuse a good agency if it comes their way. I am quite sure that Warren D. Rollins is prepared to do his level best to push the sale of any likely American line in Hardware the agency of which he may undertake.

Builders' Hardware.

American Lock manufacturers will be interested to know that many of their designs are now being followed by Willenhall manufacturers, and what is more to the point, the English article is undoubtedly cheaper than the American. One of two American agents assure me that they are not holding their own in Locks. Formerly the prettiest designs came from America, but there is now an abundance of cheap and pretty Locks of English make. If any American Lock manufacturer should be coming to this country soon I would recommend him to examine some door furniture which is now on exhibition in a shop in Oxford street, all of which is of English make. He will be surprised to see what a sudden advance there has been quite recently in the manufacture of English Locks. Apropos of Builders' Hardware, it is interesting to observe that building is not proceeding on such a large scale this year as during recent years. For example, I observe that in the Birmingham City Surveyor's annual report it is stated that there has been a considerable falling off in the number of buildings erected, as well as the number of plans deposited. The falling off is attributed in a great measure to the uncertainty of trade prospects and to the increased cost of building materials, which by the way touched

highest point about last September. In the year ending December 31, 1896, plans were submitted for

1852 houses; 1897, 1836; 1898, 2308; 1899, 2145; 1900, 1175. These figures are, I think, fairly indicative of what is going on in other centers. At the same time, as I have before pointed out, it seems to be the British Builders' Hardware merchant who suffers most, the importation of American Builders' Hardware, while showing a slight downward tendency, is on the whole declining but little, while there is in some lines of British Builders' Hardware a condition of things almost approaching stagnation.

To Take Back Samples.

The King has recently been delighted to honor the special Moorish Embassy, which recently came to our shores. Very picturesque do the ambassadors look in their Oriental garments. They have decided to take back a wide variety of samples of British manufacture. Among other goods they have particularly requested are Rifles, Quick Firing Guns, Iron Work and general metal work. They are not yet satisfied, and are still asking for more. These samples will be dispatched direct to Morocco and a special description of each article will be given to the Sultan and the Grand Vizier, with a view to developing trade relations. Doubtless American manufacturers will see to it that their own goods receive equal consideration from the Sultan. I expect information on this point could readily be obtained from the Foreign Office at Washington.

Hardware in France.

An interesting controversy is being waged as to the extent to which the French protective tariff is keeping out Hardware which otherwise would be imported. It is asserted that the growing French demand for Machine Tools indicates an intention on the part of French manufacturers to make finished goods for themselves. It can hardly be denied now that such goods as Galvanized Netting, Hay, Straw and Manure Forks, Tinned Hollow Ware and Galvanized Iron Shipping Tackle, formerly purchased by France from Great Britain, are now made in France itself. On the other hand, it is contended that the French protective tariff has raised the price of production to such a high that exporters to France have a better chance than ever. In any event it is agreed on all hands that France is still buying largely of raw material, such as Crucible and Bessemer Steel and Bar Iron, and that the market for these articles is improving. A prominent importer of Hardware in Paris says that the increased customs tariff does not interfere to any marked extent with his import trade, while it is further contended that the De Cauville Company, the light railway manufacturers, whose managing director was one of the leaders of the protectionist policy, have now issued a circular to the shareholders stating that the directors have completed an arrangement whereby they are now prepared to establish works in Belgium to supply the export trade. It is contended that this proves conclusively that the cost of production has so increased as to render it impossible to make goods in France on a competitive basis. On the other hand, however, it is quite possible that the De Cauville Company have gone to Belgium so as better to compete with Great Britain, Germany and America for the Indian and far Eastern trade.

REPORTS FROM EXPORT MARKETS.

We give below advices in regard to the conditions existing in some foreign markets, for which we are indebted to the courtesy of houses actively engaged in business and interested in American Iron and Hardware products:

Germany.

FROM ROBERT GANZ, HAMBURG.

There is undoubtedly in Europe a great market for American Hardware, for good Tools and practical novelties in the household and Kitchen Utensil line, but

mind, there is no room for trash or poorly manufactured cheap goods. Europe expects from the United States the best of all that the world can produce in the line of Hardware, and the enormous increase in the American export in this line demonstrates this sufficiently.

THE EFFECT OF CHEAP GOODS.

The American Bicycle would rule the European market to-day if the Americans had never deviated from the \$100 standard. The very moment the cheap Johns got hold of that trade and threw \$15 and \$17 Bicycles on the market as the standard of American goods, that very moment European makers had it all their own way by simply showing up the poor material and the poor quality of those wheels.

I could give you a hundred more illustrations of this kind. The American Meat Chopper was the first and best, and was not imitated on this side until cheap makes were thrown on the market. Then naturally the Germans took up the making of the line, and made something better than the cheap American makes, and in a good many instances they gain their point by playing on the national pride. As a rule the Household and Kitchen Utensils and Machinery which are brought over from the other side are of too poor material and too poor a finish to be able to compete with the home made goods. Look into the household furnishing stores here of the better class. You will find there the best of everything and of the highest finish. As the German workman is particularly proud of his Tools and spends money for same, since from the economical standpoint the best Tools are the cheapest, so the economical German housewife would rather buy a \$3 Coffee Mill than one for 30 cents, and the dealer would, of course, rather sell her the former than the latter.

On the other hand, there is also a demand for cheap goods in certain sections, but where they want those they require the native styles and shapes.

THE INTRODUCTION OF SPECIALTIES.

I do not think that the import of American Hardware will increase, except on specialties, but it takes money to introduce those. No American house can expect to introduce a specialty through circulars or by promising an agent a commission on his sales. It costs money on this side as it does on your side, and traveling with samples is more expensive here than over there. So is advertising. The best papers ask more money, all things considered, than in the United States, strange to say.

Postage is also more expensive. The cost of printed matter in the United States is 1 cent, while here it is 5 pfennigs, and the cost of a letter in Germany proper is 10 pfennigs, as much as 2½ cents compared to your 2 cents. Letters sent from Germany to other European countries cost 5 cents, while you can send a letter all over the United States for 2 cents.

I simply quote these instances to show these items cost more money in Europe than in the United States. Any good line which, in spite of the duty, can be brought in competition with domestic goods in Germany, Holland, Belgium, &c., is salable, and can be introduced with proper efforts and expenditures.

The American manufacturers must not think that while they spend \$100 to introduce their specialties on the other side, they can be sold on this side without sacrifice. I might as well say here that catalogues in the English language and in American currency are of little value on this side. In nine cases out of ten the American catalogues are too bulky, and therefore too expensive to send about.

The Hon. Frank H. Mason, the very able Consul-General of the United States at Berlin, has pointed out very often and very clearly in his reports many of the requirements of the American export trade. Some of his colleagues have done the same.

There is another point. The American manufacturer should not forget his export trade and his export connections when business and home demand are brisk. Conditions may change, and I expect they will before very long, and then it is well to have export trade and export connections.

Russia.

FROM E. SEIFER, MANAGER OF THE HOUSE OF CHOLEM BROTHERS, WILNA, RUSSIA.

IRON AND STEEL.—The import into Russia from America of finished iron and steel has been till to-day very little, because the prices of the Russian works are at present very low, and adding to the American prices the freight and import custom duties, it is impossible to import into Russia American iron and steel.

PRICES.—At present the prices in Russia for iron Bars and Sheets are as follows: Iron Bars, Siemens-Martins, 1 ruble 45 to 50 copecks per pood. (One hundred copecks make a ruble, which is equivalent to 51½ cents, American gold. A pood is 36 pounds avoirdupois.) The American price is \$1.55, Chicago, per 100 pounds; add to this price the freight and customs duties, it will make per pood 1 ruble 98 copecks, c.l.f. St. Petersburg.

SHEETS.—The price for Roofing Sheets in Russia is for A. A., 25-pound coating, 227 pounds, 2 rubles 40 to 70 copecks per pood; the American price is \$3.25, which makes, including freight and custom duties, 3 rubles 28 copecks per pood, c.l.f. St. Petersburg.

We find the same differences of prices for Tanks, Plates, Beams and Angles.

HARDWARE.—The importation of Hardware goods from America into Russia, which under other conditions could reach a very large volume, owing to the existing conditions in America and the new addition of custom duties for this line, has stopped importation heavily, especially as without America the Russians have enough markets from which to buy at favorable prices and conditions the articles demanded.

UNFAVORABLE CONDITIONS.—The unfavorable conditions that I mention above are: I. The distrust which the American manufacturer has for the Russian clients. This is the chief cause why a Russian buyer avoids going into relations with an American manufacturer. It is possible that any manufacturer has had bad experiences, but exceptions cannot serve as a rule.

MEDIUM OF COMMUNICATION.—2. The American manufacturers mostly sell their articles through the medium of a few existing commission houses, who, knowing that they are the sole sellers of those goods, sell them with a too great profit, so that they come into Russia with nearly doubled prices, making the American goods the highest in price.

WHAT IS REQUIRED.—It is, therefore, recommended to the American manufacturers, firstly, to go into direct relations with the Russian customers, and to see also that the new addition to the custom duties in Russia is removed. Then they can hope to see a considerably increasing sale of American Hardware products in the Russian market.

MARLIN FIRE ARMS COMPANY'S NEW CATALOGUE.

THE MARLIN FIRE ARMS COMPANY, New Haven, Conn., have just issued a new illustrated and descriptive catalogue. The catalogue is divided into parts I, II and III. The first section is arranged for quick reference by dealers and consumers who desire brief details of the arms. The second section is particularly for the consumer who wants more detailed information. The third section gives hints for shooters in general. The book contains 120 pages, the matter for which has been revised and brought up to date, covering the changes and improvements made in Rifles, Shotguns and Ammunition during the past year.

Percy G. James, 366 Fulton street, Jamaica, L. I., the proprietor of a very well equipped Hardware store in that town, carrying a large assortment of merchandise, has just built in the rear of his new brick store building a two-story frame warehouse for storing such bulky goods as Lawn Mowers, Wheelbarrows, Nails, Horse-shoes, Wire Cloth, &c. He has also screened the windows and doors of the entire building front, side and rear for the protection of customers, clerks and goods from the annoyance of flies and mosquitoes.

BUSINESS METHODS OF THE LARGE CORPORATIONS.

WE continue below the discussion of the question as to the alleged lack of promptness, consideration and efficiency in the business methods of some of the large consolidations. Most of the letters from which the following extracts are taken are from manufacturers:

From a Western Hardware manufacturer:

We have carefully read your correspondent's letter and in our opinion it is foolish talk. When one is looking for trouble he is apt to find it, and while the writer has some grounds for complaint as to actual present conditions, yet we do not think his reasons for same are satisfactory. The country is full of business, the factories running to their utmost capacity, behind orders, and most of them worried to death in getting supplies whether from syndicate or individual mill owners.

We are living in a new era and things do not stand still. Combinations and consolidations of capital and labor are following the natural law of evolution. Organization or combination should facilitate the promptest and most satisfactory service. Some of the new concerns are probably not yet working smoothly but will do so in time.

As to filling orders promptly, we question if any single small operator can supply goods as quickly as the Standard Oil Company.

Perhaps something can be said on both sides of this question, but there is no use fighting the inevitable and it is just as well to keep a calm and even temper. Very often a mountain is a mole hill after all.

A manufacturer calls attention to the loss of esprit de corps in connection with consolidations:

Referring to article by "Hardware" in *The Iron Age*, we find the delays complained of do exist. It is almost impossible to procure reasonably prompt delivery from many of the large manufacturing combinations. It seems to be an inherent defect in the organizations of the consolidated manufacturing establishments, due perhaps to the lack of a competent head in some department, who should be a man of experience, able to make quick decisions and also to infuse into his subordinates the importance of not leaving their desks until the business of the day is finished.

The method of many of the large organizations has produced the result of a total destruction of ambition in many who have heretofore conducted the business with a feeling of individual interest and responsibility.

When in the arena the Roman gladiators had the eyes of the emperor and the populace steadily and earnestly fixed upon their every movement; if we contrast this with one of the men of the "We are coming, Father Abraham, 300,000 more," it will be seen the latter is completely lost in the shuffle, and counts himself of no consequence.

A "select few" may find favor with the "powers that be," but the subaltern must consider himself only a high private the rest of his life; consequently he pursues his way a disappointed man with the entire absence of that great incentive to success—*esprit de corps*.

We get the results.

From Eastern manufacturers:

We have had considerable experience with the so-called trusts during the past two years, and have had very great difficulty in getting anything like prompt attention, either in shipment of our orders or answers to letters and telegrams. We think the extra delay of from 24 to 48 hours, as mentioned in your article, is certainly fully under our average, according to experience. We have sent telegrams upon important matters to head offices and received a mail reply the second day after. Had there been any competition on this line of goods outside of the trust, one experience of this sort would have been the only one.

I think that all statements made in the article are

true and not enlarged more than facts will warrant. They certainly are not, according to our experience.

An additional criticism from another manufacturer:

I do not think your correspondent has overdrawn the situation ever so little, and the strongest remaining friendly link between the large consolidations and the manufacturer is their traveler or representative, who in years past, when representing the various manufacturing concerns, discussed with the manufacturer his wants for this or that material, toughness, temper and finish required for the manufacturer's line; but these things are fast becoming a thing of the past, and the consolidated interests are serving the manufacturer a little as the economical farmer did his field hands their greens, by mowing them, with a result we are making on some lines of goods inferior finished articles, in spite of all our skill and extra labor expended upon the material.

It is also my belief the consolidations are changing methods of finishing, &c., which materially changes our supplies, without first consulting the manufacturer whether such change in method would improve or injure the articles into which the supplies are to be manufactured. There are many things coming from the consolidated offices which would lead the practical manufacturer to feel he could produce the same result in his own manufacturing business by handing it over to the educated young man who has drawn liberal supplies from the resources of the manufacturer, but who has had no mechanical training, or, in fact, experience of any kind in directing skilled operatives, who properly directed must always, in my opinion, be the keystone to successful manufacturing operations.

In closing, like your correspondent, I believe there is ample room for smaller industries when managed by practical mechanical men associated with men experienced in the wants of purchasing trade.

A Western manufacturer of Hardware defends the consolidations:

We believe the party who wrote the article is sore, and if you could get at the real facts, you would find this to be the case. We do not believe that small concerns do business as promptly and as well as large concerns. Our experience leads us to believe that all such organizations as referred to are in shape to and do attend to business better than smaller and less competent concerns can or do.

We believe, however, that there is some truth in the general statement, but we believe it is because of the rush of business that has come to all manufacturers, and consolidation of so many has added to the confusion, and for a time at least the complaints made by the writer must be true.

A Western merchant tells of his experience with the consolidations:

There are some statements in this article that we cannot verify; for instance, that of answering correspondence. We find that these large corporations are very prompt in answering correspondence, and their correspondents are exceptionally polite men. And when it comes to the matter of system, we believe the large corporations have it. They certainly have their business well systemized, as it must be. We find that they know more about the details of their business than did the smaller concerns with whom we had business until they became consolidated into larger ones.

We do agree with the writer of the article when he states "that you cannot find out when a shipment will be made" and "it is rather difficult to have them made as agreed," also "promises are made but to be broken." We have found this to be the absolute truth and we have spent in many instances more than the profits in telegrams, telephone messages, special delivery letters, and have even had to go to the expense of taking the train and making long journeys to the

mills or factories to induce them to make shipment. This was a very rare thing previous to the formation of the larger corporations. However, we can see a very reasonable excuse for this state of affairs, and we believe that this excuse lies in the fact that the very large increase of demand has overwhelmed the large concerns with orders, so that they have been unable to fill them within the time specified. We have heard of instances, however, where orders were not given their turn, and we know of several instances where orders were given preference over many others because the purchaser offered a slight difference in price in order to get immediate shipment. This, however, we do not believe is a frequent occurrence, and with the above exception we have not found that the large consolidations have been detrimental to our business interests, and we have had very large business dealings with them for the last two years.

From a prominent jobbing house:

We do not think they are by any means so bad as would be inferred from the article referred to over the signature of "Hardware."

While we believe this to be true, we do find that in some respects correspondence has suffered thus far by the changes introduced. This comes in part from the subdivision into departments, that may not be in as close touch with each other as they should be; in part also by the important factor of the distance between the offices and the mills that may be doing the work, and also in considerable part doubtless from the inexperience in such extensive and intricate affairs as are now to be treated by those in charge. This will gradually improve, and we believe the service will become satisfactory.

BAD ACCOUNTS.

A RECENT happening in a country Hardware store, whose proprietor was temporarily absent, is a striking example of the unbusinesslike way in which credit is extended in some (it is hoped not many) stores. The circumstances were as follows:

An old man had made a purchase, and when the clerk handed him the wrapped parcel the customer leaned over the counter and said: "You will have to chalk it." "What is your name?" asked the clerk. "It's over there," said the old man, pointing to the ledger on the desk. "I am hard up now." Again the clerk inquired his name, to which a bystander replied "Jones." So the goods were charged to "Jones."

The old man was evidently unknown to the clerk; and, although the customer might have been like a singed cat, "better than he looked," it was not a good basis for enlarging an account which the clerk knew nothing of.

He took the old man's word that he had an account, and he accepted the fact that the bystander knew the customer's name as a quasi guarantee that he was "all right."

It is obvious that this charge should not have been made without investigating the right the purchaser had to having the goods charged; and even if he was "all right," the charge should never have been made without ascertaining his initials or first name. Carelessness in these and similar regards are fertile causes of bad accounts.

PRICE-LISTS, CIRCULARS, &c.

PELOUSE SCALE & MFG. COMPANY, Chicago, Ill.: Scales. A catalogue illustrates, with prices, Postal, Commercial and Mail and Express Scales, also Letter Balance and Envelope Opener.

COOPER HOSE MENDER COMPANY, Providence, R. I., for whom John H. Graham & Co. are sole agents, 113 Chambers street, New York: Circular describing the Cooper Hose Mender.

MAYBERRY HARDWARE COMPANY, Birmingham, Ala.: Sporting Goods catalogue of 64 pages.

BLACKLOCK FOUNDRY, South Pittsburg, Tenn.: Illus-

trated catalogue and price-list of Sad Irons, Country and Stove Hollow Ware, Sugar Kettles, English Pots, Cast Iron Shoe Lasts and Stands, Kitchen and Corner Sinks, Grates, &c.

WESTERN TUBE COMPANY, Kewanee, Ill.: Wrought Iron and Steel Pipe, Cast and Malleable Iron Fittings, Brass Fittings, Brass and Iron Valves and Cocks, Radiators and Coils for steam and hot water, &c. The company issue a catalogue, the illustrations of which, with few exceptions, are photographic reproductions of the originals.

GIBFORD MFG. COMPANY, Adrian, Mich., for whom Hermann Boker & Co., 101-103 Duane street, New York, are sole selling agents, have just issued an attractive catalogue of Razor Stropps which are sold under the trade-mark Redeforse. These goods, of which there are many patterns and sizes, are said to be made of the highest grade of horsehide and calfskin, especially tanned for their requirements. These Stropps are designed to retail at from 35 cents to \$2 each.

TRADE ITEMS.

In the reference to the incorporation of the Columbian Enameling & Stamping Company in our issue 20th ult. the location of the company, Terre Haute, Ind., was inadvertently omitted. It is the intention of this company to manufacture the lines of goods formerly made by the Bellaire Stamping Company, Harvey, Ill., whose expert labor and special talent are connected with the new concern. Their new plant will be a modern one in every respect.

COLONEL MASSEY, who has long been identified with the Montreal branch of the Canada Screw Company, Hamilton, Ont., manufacturers of Screws, Bolts, Rivets, &c., has resigned his position and has been succeeded by James S. Parkes, for 15 years his assistant. The Company's warehouse is at 446 St. Paul street. Mr. Parkes, who is well known to the trade in that section, is also desirous of obtaining two or three nonconflicting agencies for American manufacturers.

HARDY GREENWOOD, San Antonio, Texas, who is conducting a brokerage business in Iron, Steel and Hardware, acting as resident salesman on commission for manufacturers for whose products there is a demand in that city, is desirous of obtaining a few other accounts in addition to those he is now working. Among the lines for which he is looking are Tank and Stack Sheets, Tinware, Galvanized Ware, Hollow Ware, Wagon Material, Corrugated Roofing and Carriage Malleables. Some of the manufacturers for whom Mr. Greenwood is now acting are the Kansas City Bolt & Nut Company, Dillon-Griswold Wire Company, Diamond State Steel Company and Harrisburg Pipe & Pipe Bending Company.

FRED. BUCK, vice-president of the Lufkin Rule Company, Saginaw, Mich., has just returned from a business trip to London, where he went some weeks ago to establish a headquarters for the sale of their goods abroad. This company make Measuring Tapes of every description, Steel Rules, Hickory Board and Log Rules, besides a number of lumber specialties.

CATTARAUGUS CUTLERY COMPANY, Little Valley, N. Y., are going to run a special train from Chicago to Buffalo July 22 for the accommodation of their customers and friends. This train will run over the Erie Railroad and will be one of their fastest limited trains. The accommodations will be first class in every respect, and the company will make it a point to look after the comfort of their customers. They will also assist them to find suitable hotel accommodations while at Buffalo, and will ask them to use their booth in the Manufacturers' and Liberal Arts Building as headquarters while visiting the exposition.

THE reorganized Kelly Axe Mfg. Company, Alexandria, Ind., have just incorporated with a capital stock of \$2,000,000, which is fully paid up. The stock has been divided into preferred and common, there being \$1,750,000 of the former and \$250,000 of the latter. The officers and directors of the company are: William C.

Kelly, president; J. P. Kelly, vice-president; Robert K. Thompson, secretary; Henry Eitel, president of the Union Trust Company of Indianapolis, treasurer, and Geo. T. Price. It is stated that the company have now in hand orders sufficient to keep their mammoth plant in operation for ten months to come. While the factory has heretofore made nothing but Axes, a Scythe department has recently been added and is now in full operation, its capacity being 40,000 dozen per year. It is the company's intention to add still other departments, such as the manufacture of Shovels, Hatchets, Hoes and similar Edged Tools.

E. T. FRAM'S NEW CATALOGUE.

E. T. FRAM, Keystone Lock Works, Lancaster, Pa., has just issued a new catalogue of 120 pages, bound in cloth, illustrating and describing Padlocks of pressed steel, wrought, cast and malleable iron, steel, bronze, brass, nickel and aluminum, and Night Latches. Some numbers of old Locks have been changed and many new styles are shown. Pages 48 to 53 describe the Greek Letter line in pressed steel. Pages 64 and 65 are new goods in fancy plated Padlocks. Pages 69 to 81 inclusive contain new goods, pages 82 to 84 illustrate their new Pentagonal Lock and Automatic and Cotton Bale design Padlocks. With the catalogue is a blank discount sheet showing their new form of making up discounts. This line comprises 350 different Padlocks. The New York representatives are Alder & Boyd, 37 Warren street.

MISCELLANEOUS NOTES.

Razors and Razor Handles.

Alexis Witte, 81 Warren street, New York, manufacturer and importer of razors, razor handles and other forms of cutlery, has just issued a series of eight cards or hangers, each 14 x 11 inches, illustrating and describing the various features of a razor. One plate contains ten *fac-simile* reproductions of handles in color, among which are real and imitation tortoise shell, imitations of carnelian, onyx, amber, jade, matted rubber and several kinds of horn. On other cards are illustrated in black a large variety of razor handles in black rubber, Gossy pine, bone, ivory, aluminum, pearl, &c. There are also 21 styles shown of razor blades only, both finished and blank, all of the blades and handles being actual size. One card is devoted entirely to illustrating Witte's standard of A1 razor concaving, giving sectional views of a razor blade, enlarged ten times. The engravings are 7¼ inches long, and show at a glance the significance of the trade terms, full concaved, three-quarters concaved, one-half concaved and one-quarter concaved, the grinding being done on stones 1¾, 2¼, 3 and 4 inches in diameter, for ⅝-inch size in the order named.

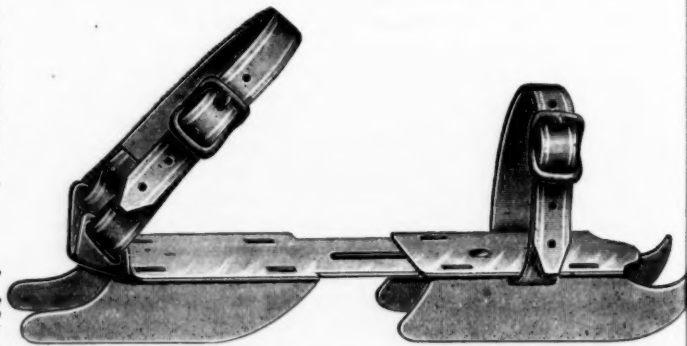
Parker Wire Goods Company.

The Parker Wire Goods Company of Worcester, Mass., have lately been organized for the purpose of manufacturing a line of bright wire goods, coat and hat hooks and special wire goods. The company are a Massachusetts corporation with a capital stock of \$10,000, all of which has been paid in. A. H. Parker, president and treasurer, has a thorough knowledge of the wire goods business and a large acquaintance with the trade, having been for the past 12 years connected with the Wire Goods Company of the same city in the capacity of salesman and general sales agent. The company will start manufacturing goods in a moderate way, and increase as the business demands.

Winslow's Double Runner Skate.

The Samuel Winslow Skate Mfg. Company, Worcester, Mass., have on the market the Winslow double runner skate for ice, as here illustrated. The original feature of the skate with them is the application of the extension

principle to the double runner skate, which we are advised they were the first to apply. One marked advantage to the dealer and consumer alike is that owing to its adjustability one skate can be quickly made to fit



Winslow's Double Runner or Bob Sled Skate.

shoes varying in length from 6 to 9½ inches, thus fitting, if need be, several members of a family, or different children as well as reducing the variety the dealer must carry to meet diverse wants.

Chicago High Speed Rotary Washer.

The New Century Washing Machine Company, 6 and 8 Wabash avenue, Chicago, Ill., are manufacturing the washer herewith illustrated. The machine is referred to as a high speed rotary washer, the cover of which is perfectly balanced by the fly wheel. The fly wheel may be turned backward or forward, doing, it is stated, excellent work both ways. The machine is devoid of clutches or springs, and, it is remarked, is light running,



Chicago High Speed Rotary Washer.

noiseless, and can be operated by a 10 year old child. The gearing is covered and the legs are bolted to the machine. The tub is made of white pine, with corrugated sides and bottom. Heavy steel hoops are placed at the top and bottom, and a heavy electrically welded wire in the center. The washer has a space for an 11-inch wringer, also a large opening for handling clothes.

The Matchless Pivot Door Hinge.

The Lawson Mfg. Company, 115 Lake street, Chicago, have brought out a new ball bearing pivot hinge for heavy doors, a sectional cut of which is shown in Fig. 1. The size of the top plate is $1\frac{1}{2}$ inches wide by

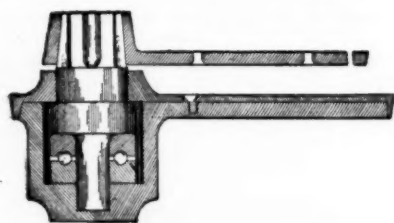


Fig. 1.—The Matchless Pivot Door Hinge.

5 inches in length, while the depth of the hinge box is $1\frac{1}{4}$ inches. Tool steel case hardened ball bearing cups retain the balls and hold the weight of the door. The shallow depth of this hinge, it is pointed out, permits it to be readily set in stone or iron sills. A ball bearing top hanger has been designed to be used with this

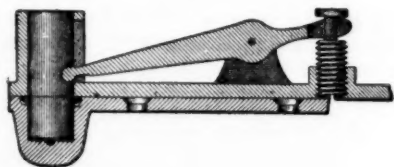


Fig. 2.—The Ball Bearing Top Hanger.

hinge, a sectional cut of which is given in Fig. 2. The hinge and the top attachment have no springs. These hinges and hangers are adapted to use not only for outside doors, but also for vestibule and secret doors.

The St. Louis Air Rifles.

The St. Louis Air Rifle Company, 811-813 Monroe street, St. Louis, Mo., are offering a new model air rifle, shown in Fig. 1. This is a single shot with a dart shoot-



Fig. 1.—Single Shot Model Air Rifle.

ing device. In Fig. 2 is illustrated a repeating rifle which will be ready, the company state, September 1. The rifles will be made in two calibers, B. B. and 000 or F. The metal portions of the rifles are referred to as all of brass, highly polished and plated, while the stock is



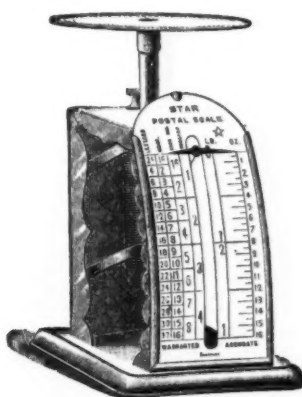
Fig. 2.—Repeating Model Air Rifle.

of wood that takes a fine finish. The working parts of the rifles are concealed by a neat covering, which is readily removable. It is pointed out that when the working parts are exposed no more skill is required to replace them than is possessed by the average boy. The dart shooting device, it is explained, is new and original and simple. To charge the rifle it is only necessary to

work the pump rod once, as it is shown that the extra long stroke gives enough force for ordinary requirements. The force may be increased by giving three or more strokes to make the rifle effective on cats, squirrels, &c. The rifles may be taken down and may be packed in a small trunk. The rifles are fitted with adjustable sights, are 35 inches long and weigh less than 2 pounds each.

The Star Postal Scale.

The cut herewith shown is of a postal scale offered by the Pelouze Scale & Mfg. Company, Chicago, Ill. The scale is being made with a new frame, which is referred to as a great improvement over the old pattern. The scale weighs up to 1 pound by $\frac{1}{2}$ ounces, and also gives the cost in cents of the amount of postage re-

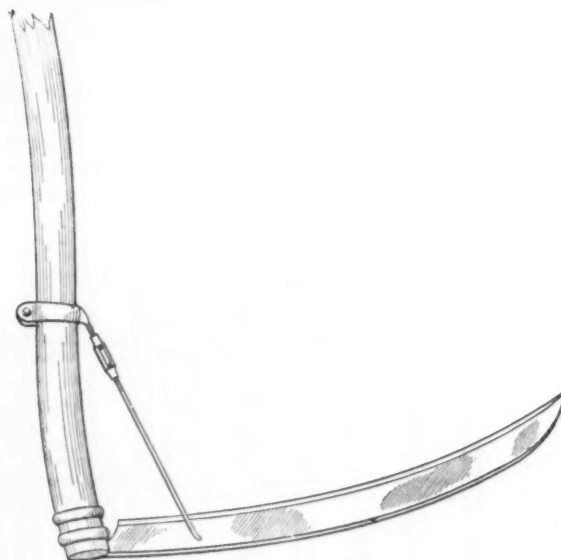


The Star Postal Scale.

quired for letters, books, merchandise and newspapers. The scale is 3 inches high, 2 inches wide and 3 inches deep, and is designed for ladies' or gentlemen's desks. The scales are furnished in nickel plate and oxidized copper.

The Secure Scythe Brace.

The Iowa Farming Tool Company, Fort Madison, Iowa, are offering the scythe brace herewith shown. It is designed to strengthen and brace a scythe and snath so that they will stand hard usage in mowing heavy weeds, bushes, &c. The manufacturers remark that the



The Secure Scythe Brace.

device is strong, easily and quickly applied, that it cannot work loose, as there are no parts to catch or clog, that it is applied by the use of a nail, no wrench or screw driver being required, and that the band will allow for ordinary variations in sizes of bush snaths. Application for a patent has been made.

The M. & M. Combination Staple Puller and Fencing Pliers.

The Maxson & Maxson Company, West Edmeston, N. Y., are offering the combined staple puller, wire cutter, wire splicer, wire tightener, &c., shown in the accompanying cuts. The tool is forged from crucible tool steel, and is warranted against defects in material, temper or construction. The manner of pulling a staple is

horn as a fulcrum, which strains the wire and brings the tool out of the way so a staple may be driven. The pliers may also be used as a wire cutter, a nail puller and a hammer.

The Mesker Twentieth Century Fence.

The accompanying cut represents fences offered by Mesker & Bro., 421-519 South Sixth street, St. Louis.



Fig. 1.—The M. & M. Combination Staple Puller and Fencing Pliers.

illustrated in Fig. 1. The jaws are so shaped, it is explained, as to easily grapple into the loops of staples, and when the jaws are shut into the loop they force it well back from the points of the pliers in a strong portion of the jaws. It is pointed out that when drawing a staple the fulcrum is first at the upper portion of the horn, as shown in Fig. 1, where a powerful leverage is obtained, and as the staple is drawn and offers less

Mo. The fences are made entirely of steel pressed into the molded form. Being composed of light material, it is pointed out that the pickets and rails can be made wider than of round iron, and therefore present a larger

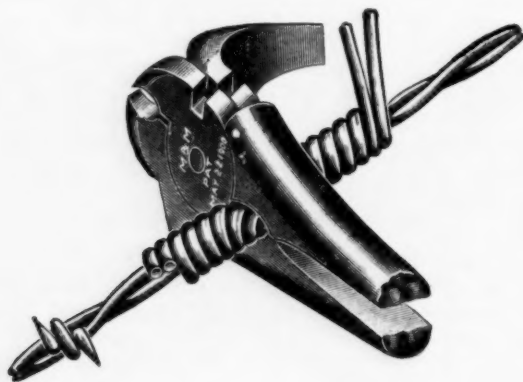


Fig. 2.—Wire Splicer.

resistance, the fulcrum point constantly moves further from the staple, and the staple is drawn without being bent, twisted or otherwise injured and may be saved for further use. To splice a wire the ends are placed in the splicing grip from opposite directions, when the

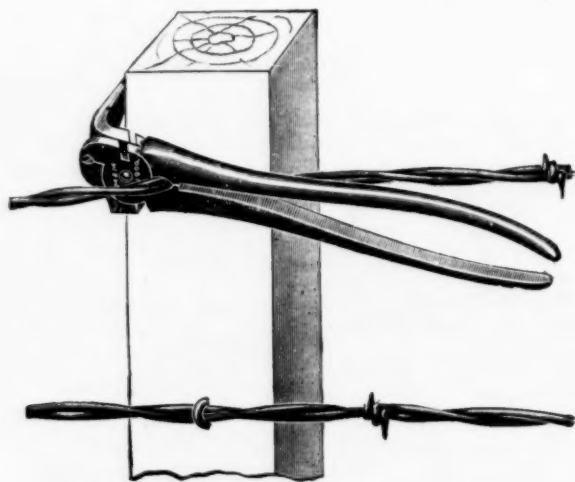
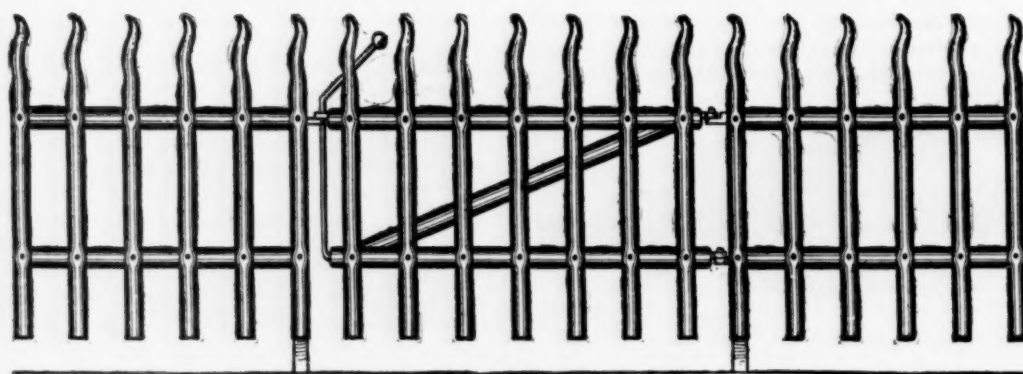


Fig. 3.—Wire Tightener.

surface. The fences are furnished complete, ready to be set and bolted, but are shipped knocked down, closely nested in bundles to reduce freight charges. The pickets are 27 1/4 inches long, and the rails are made in 8-foot



The Mesker Twentieth Century Fence.

grips are closed tightly, and the ends of the wire are wound around the main wires, as shown in Fig. 2. In Fig. 3 the process of tightening a wire is shown. The wire is grasped in the splicer grip and the horn is hooked on the side of the post. The handles of the pliers are then brought to the left around the end of the

lengths. The fences consist of line posts, rails, pickets, bolts and gates with latches and hinges. The gates are made to swing both ways, and are self closing and self latching. The manufacturers claim that the fences are stiffer and stronger than if made of ordinary plain round iron.

Current Hardware Prices.

REVISED JULY 2, 1901.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 83½@83½&10% signifies that the price of the goods in question ranges from 83½ per cent. discount to 83½ and 10 per cent. discount.

Cut Prices.—In the present condition of the market there is a good deal of cutting of prices by the jobbing trade, whose quotations are often lower than those of the manufacturers.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE INDEX SUPPLEMENT (May 8, 1900), which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters Blind—

Domestic, ½ doz. \$3.00... 33½@33½&10%
North's... 10%
Zimmerman's—See Fasteners, Blind.
Window Stop—
Ives' Patent... 25&5%
Taplin's Perfection... 50%

Ammunition—See Caps, Cartridges, Shells, &c.

Anvils—American—

Eagle Anvils... 7½@7½%
Hay-Budden, Wrought... 10@10%
Horsehoe brand, Wrought... 9½@9½%
Hanson... 7½@7½%
Trenton, Wrought... 8½@8½%
Imported—
Peter Wright's... 9½@9½%

Anvil, Vise and Drill—
Millers Falls Co., \$18.00... 20%

Apple Parers—See Parers, Apple, &c.

Aprons, Blacksmiths'—
Hull Bros. Co.
Lots of 1 doz... 25%
Small or Lots... 30%
Lots of 3 doz... 30%

Augers and Bits—
Com. Double Spur... 70@...
Boring Machine Augers... 60@10@10@10%
Car Bits, 12-in. twist... 60@60@10%
Jennings' Pattern
Auger Bits... 50@10@50@10%
Ford's Auger and Car Bits... 40@10%
Forester Pat. Auger Bits... 35%
C. E. Jennings & Co.
No. 10 ext. lip, R. Jennings' list... 40%
No. 30, R. Jennings' list... 50%
Russell Jennings'... 25&10@25%
L'Hommedieu Car Bits 5½@10½@10%
Mayhew's Countersink Bits... 45%
Pugh's Black... 20%
Pugh's Jennings' Pattern... 35%
Snell's Auger Bits... 60%
Snell's Bell Hangers' Bits... 50@10%
Snell's Car Bits, 12-in. twist... 40%
Wright's Jennings Bits (R. Jennings' list)... 50%

Bit Stock Drills—
Standard List... 65@65&5%

Expansive Bits—
Clark's small, \$18; large, \$26... 50@10%
Larigue's Clark's Pattern, No. 1, ½ doz, \$26; No. 2, \$18... 50@10%
C. E. Jennings & Co., Steer's Pat... 33½%
Swan's... 60%

Gimlet Bits—
Common Double Cut, gro. \$2.25@2.75
German Pattern... gro. \$3.50@4.50
Double Cut, makers' lists... 50@50&10%

Hollow Augers—
Bonney Pattern, per doz. \$11.00@11.50
Ames... 25&10%
New Patent... 25&10%
Universal... 20%
Wood's Universal... 25%

Ship Augers and Bits—
Ford's... 40%
C. E. Jennings & Co... 40%
L'Hommedieu's... 15&13%
Watrous'... 10%

Awl Hafts, See Hafts, Awl.

Awls
Erad Awls:
Handled... gro. \$2.75@3.10
Unhandl'd, Shouldered, gro. \$3@3.50
Unhandl'd, Patent... gro. \$3.50@70c
Feg Awls:
Unhandl'd, Patent... gro. \$1@1.50
Unhandl'd, Shouldered, gro. \$1@1.50
Scratch Awls:
Handled, Common... gro. \$3.50@4.00
Handl'd, Socket... gro. \$11.50@15.00
Awl and Tool Sets—See Sets, Awl and Tool.

Axes—
First Quality, best brands, \$5.50@5.75
First Quality, other brands, \$5.50@5.75
Jobbers' Special Brands:
Good Quality... 45.00@5.25
Best Quality... 35.25@5.75
Cheap, Handled Axes... \$5.50@5.75
Breed, add 5c doz.

Axle Grease—See Grease, Axle.

Axles—

Concord, Loose Collar... 4½@5c
Concord, Solid Collar... 4½@5c
No. 1 Common... 3½@3½c
No. 1½ Com. New Style... 3½@3½c
No. 2 Solid Collar... 4½@4½c
Nos. 11 to 16... 70¢@10¢
Nos. 15 to 18... 60¢@10¢
Nos. 19 to 22... 75¢@5¢
Boxes, Axle—
Common and Concord, not turned... 1b. 4½@4½c
Common and Concord, turned... 1b. 4½@5c
Half Patent... 1b. 8@9c

Balances—Sash—
Caldwell new list... 50%
Pulman's... 60%

Spring—
Spring Balances... 50¢@10¢
Chattillon's:
Light Sg. Balances... 40¢@10%
Straight Balances... 40%
Circular Balances... 40%
Large Dial... 80%
Peltouze... 50%

Barb Wire—See Wire, Barb.

Bars—Crow—
Steel Crowbars, 10 to 40 lb., per lb... 2.90@3.10c

Beams, Scale—
Scale Beams, List Jan. 12, '83, 30¢@10%
Chattillon's No. 1... 30%
Chattillon's No. 2... 40%

Beaters—Egg—
Standard Co.:
No. 5 Steel Handle Dover, ½ gro. \$6.50
No. 10 Cast Handle Dover, ½ gro. \$8.00
No. 10 Steel Handle Dover, ½ gro. \$8.00
No. 15 Extra Heavy Steel Handle, ½ gro. \$15.00
Rival, ½ gro. \$10.00
Taplin Mfg. Co.:
No. 5 Small Family size... \$3.50
No. 100 Regular Family size... \$5.00
No. 102 Regular Family size tinned... \$9.50
No. 150 Large Family size... \$15.00
No. 152 Large Family size, tinned... \$17.00
Lyon's, Standard size... ½ doz. \$1.75
Wooler (S. S. & Co.), ½ gro. \$7.50

Bellows—
Blacksmith, Standard List, 70¢@10%
C. E. Jennings & Co., Blacksmith... 60@10%
C. E. Jennings & Co., Hand... 33½%

Blacksmiths—
Inch... 30 32 34 36 38 40
Each, \$3.50 \$3.75 \$4.25 \$4.80 \$5.35 \$6.15
Extra Length:
Each, \$4.00 \$4.55 \$5.10 \$5.60 \$6.40 7.50

Molders—
Inch... 9 10 11 12 14 16
Doz... \$6.75 7.25 8.50 9.50 12.00 14.50

Hand—
Inch... 6 7 8 9 10 12
Doz... \$3.75 4.25 4.50 5.00 5.70 6.75

Bells—Cow—
Ordinary goods... 75¢@75¢10%
High grade... 70¢@70¢10%
Jersey... 75¢@10%
Texas Star... 50%

Door—
Abbe's Gong... 45%
Barton Gong... 55%
Home, R. & E. Mfg. Co.'s... 55&10%
Lever and Pull, Sargent's... 40@10&10%
Yanks Gong... 35%

Hand—
Hand Bells, Polished... 60¢@5¢
White Metal... 55@55&10%
Nickel Plated... 50@50&10%
Swiss... 60@60&10%
Silver Chime... 33½@33½&10%

Miscellaneous—
Farm Bells... 1b. \$2@2½c
Steel Alloy Church and School... 60¢@10¢
National Bell Foundry Co.:
Superior Cast Steel Church and School... 50&10&50%
Wilmot & Hobbs Mfg. Co. Gongs... 70%

Belt—Rubber—
Agricultural (Low Grade), 75¢@10¢
Common Standard... 75¢@10¢
Standard... 70¢@70¢10%
Extra... 60¢@10¢
High Grade... 50¢@10¢
Boston Belting Co.:
Seamless Stitched, Imperial... 45&5%
Boston... 50&5%
Niagara... 60&5%

Leather—
Extra Heavy, Short Lap... 50¢@10¢

Regular Short Lap 60¢@10¢
Standard... 60¢@10¢
Light Standard... 70¢@70¢10%

Cotton—
Rossendale-Reddaway B. & H. Co.:
Sphinx Brand... 60¢@10%
Durable Brand... 70%

Bench Stops—See Stops, Bench

Benders and Upsetters, Tire—
Green River Tire Benders and Upsetters... 20%
Stoddard's Lightning Tire Upsetters... 40@50%

Bicycle Goods—
John S. Long's Son's 1899 list:
Chain... 50%
Parts... 50%
Spokes... 50%
Tubes... 60%

Bits—
Auger, Gimlet, Bit Stock Drills, &c.—
See Augers and Bits.

Bit Holders—See Holders.

Blind Adjusters—See Adjusters, Blind.

Blind Fasteners—See Fasteners, Blind.

Blind Staples—See Staples, Blind.

Blocks—Tackle—
Common Wooden... 70¢@70¢10%
Claydon's teel... 60¢@10¢
Ford's Star Brand Self Lubricating... 60¢@10%
Hollow Steel, Ford's Pat. Star Brand... 60¢@10%
Lane's Patent Automatic Lock and Junior... 30%
Stowell's Novelty, Mal. Iron... 50%
See also Machines, Hoisting.

Boards Stove—
Zinc, Crystal, &c... 40¢@10¢

Boils—
Carriage, Machine &c.—
Common, list Jan. 30, '95... 65¢@10¢
Norway Iron, \$5.00, list Oct. 7, '84... 80¢@80¢5%
Phila. Eagle, \$3.00 list May 21, '99... 80¢@80¢10%

**Bolt Ends, list Jan. 30, '95, 70¢@70¢10%
Machine, list Oct. 7, '99... 70¢@70¢10%
Machine with C. P. C. & T. Nuts... 65¢@12½%**

NOTE—The rapid advances in manufacturing prices enable the jobbers to cut prices freely.

Door and Shutter—
Cast Iron Barrel, Round Brass Knob:
Inch... 3 4 5 6 8
Per doz... \$0.26 \$0.30 \$0.39 \$0.47 \$0.65
Cast Iron Spring Foot:
Inch... 6 8 10
Per doz... \$1.00 1.25 1.75
Cast Iron Chain, Flat, Japaned:
Inch... 6 8 10
Per doz... \$0.75 1.05 1.30
Cast Iron Shutter, Brass Knobs:
Inch... 6 8 10
Per doz... \$0.67 \$0.80 1.00
Wrought Barrel Brass Knob:
Inch... 3 4 5 6 8
Per doz... \$0.44 \$0.50 \$0.61 \$0.70 1.25
Wrought Barrel... 70¢@10¢
Wrought Bronzed... 40¢@50¢
Wrought Flush, B. K... 50¢@10¢
Wrought Shutter... 40¢@10¢
Wrought Square Neck... 50¢@10¢
Wrought Sunk... 60¢@10¢
Ives' Patent Door... 60%

Stove and Plow—
Plow... 60¢@10¢
Stove... 77½@77½&10%

Tire—
Common... 75¢@75¢10%
Norway Iron... 80¢@80¢5%
American Screw Company
Norway Phila. list Oct. 16, '84... 82½%
Eagle Phila. list Oct. 16, '84... 85%
Bay State, list Dec. 28, '90... 77½%
Franklin Moore Co.:
Norway Phila. list Oct. 16, '84... 89½%
Eagle Phila. list Oct. 16, '84... 85%
Eclipse, list Dec. 28, '90... 77½%
Port Chester Bolt & Nut Company
Empire, list Dec. 28, '90... 77½%
Keystone Phila. list Oct. '84... 85%
Norway Phila. list Oct. '84... 89½%

Borers, Tap—

Borers Tap, Ring, with Handle:
Inch... 14 14 14
Per doz... \$4.50 5.00 5.75 7.45
Inch... 1½ 2½ 3½
Per Doz... \$3.65 11.50
Enterprise Mfg. Co., No. 1, \$1.95; No. 2, \$1.65; No. 3, \$2.50 each... 25%

Boring Machines—See Machines, Boring.

Boxes Mitre—
C. E. Jennings & Co... 40%
Seavey's, per doz., \$30... 40%

Braces—
NOTE—Most Braces are sold at net prices.
Common Ball, American... \$1.15@1.25
Barber's... 50¢@10¢
Fray's Genuine Spokford... 60%
Fray's No. 70 to 120, 81 to 135, 207 to 414... 60%
C. E. Jennings & Co... 50¢@10%
Mayhew's Ratchet... 60%
Mayhew's Quick Action Hay Patent... 50%
P. S. & W. O. Peck's Patent... 60¢@10¢

Brackets—
Wrought Steel... 75¢@75¢10%
Bradley's Wire Shelf:
Full cases... 80%
Broken cases... 75¢@10%
Griffin's Pressed Steel... 15%
Griffin's Folding Brackets... 70¢@10%

Bright Wire Goods—See Wire and Wire Goods.

Broilers—
Wire Goods Co... 75%

Buckets, Well and Fire—See Pails.

Bucks, Saw—
Boss... \$48.00
Hoosier... \$36.00

Bull Rings—See Rings, Bull.

Butts—Brass—
Wrought list Sept., '96... 40¢@40¢5%
Cast Brass, Tiebout's... 50%

Cast Iron—
Fast Joint, Broad... 50¢@50¢10%
Fast Joint, Narrow... 50¢@50¢10%
Loose Joint... 70¢@50¢10%
Loose Pin... 70¢@50¢10%
Mayer's Hinges... 70¢@50¢10%
Parliament Butts... 70¢@50¢10%

Wrought Steel—
Loose Joint... 70¢@50¢10%
Table and Back Flaps... 70¢@50¢10%
Narrow and Broad... 70¢@50¢10%
Inside Blind... 70¢@50¢10%
Loose Pin... 70¢@50¢10%
Loose Pin, Ball and... 70¢@50¢10%

Steeple Top

Cages, Bird—
Hendryx, Brass:
8000, 5000, 1100 series... 50%
1800 series... 50%
200, 300, 600 and 900 series... 40&10%
Hendryx, Bronze:
700, 800 series... 40&10%
Hendryx Enamelled... 40&10%

Callipers—See Compasses.

Calks, Toe and Heel—
Blunt, 1 prong... per lb. 4½@4½c
Sharp, 1 prong... per lb. 4½@4½c
Perkins' Blunt... \$3.50
Perkins' Sharp... \$3.50

Can Openers—See Openers, Can

Cans, Milk—
Illinois Pattern, \$1.75 2.10 2.25 each.
Iowa Pattern... 2.40 2.60 each.
Buffalo Pattern... 2.30 2.50 each.
New York Pattern \$3.00 3.25 3.40 each.
Baltimore Pattern 2.50 2.85 3.10 each.

Cans, Oil—
Buffalo Family Oil Cans:
3 5 10 gal.
\$48.00 60.00 108.00

Caps—Percussion—
Eley's E. B... 60c
G. D... per M \$2@2½c
F. L... per M \$7@10c
G. E... per M \$7@10c
Musket... per M \$7@10c

Primers—
Berdan Primers, \$1.00... 85%
B. L. Caps (Sturtevant Shells) \$1.00... 85%
All other primers... \$1.10@1.12

Carpet Stretchers—
See Stretchers, Carpet.

Gates, Molasses and Oil-

Steeb's 50¢ 100¢ 100¢
Gauges-
 Marking, Mortise, etc. 55¢ 100¢ 100¢

Barrett's Comb. Roller Gauge 55¢ 100¢ 100¢
 Stanley R. & L. Co.'s Butt & Babbet Gauge 55¢ 100¢ 100¢

Wire, Brown & Sharpe's 55¢ 100¢ 100¢
 Wire, Morse's 55¢ 100¢ 100¢
 Wire P. S. & W. Co. 55¢ 100¢ 100¢

Gimlets-

Nail, Metal, Assorted, gro. \$1.40 @ 1.75
 Spike, Metal, Assorted, gro. \$3.00 @ 3.50
 Nail, Wood Handled, Assorted, gro. \$1.00 @ 1.25
 Spike, Wood Handled, Assorted, gro. \$5.00 @ 5.25

Glass, American Window

Jobbers' List, Jan. 21, 1901.
 Less than Carloads 80¢ 80¢
 Carloads 85¢ 85¢
 5000 Boxes 87¢ 87¢

Glue-Liquid, Fish-

List A, Bottles or Cans, with Brush, 37¢ @ 50¢
 List B, Cans (1/2 pta., pta., qts.) 55¢ @ 58¢
 List C, Cans (1/2 gal., gal.) 25¢ @ 15¢
 International Glue Co. (Martin's) 4¢ @ 10¢ @ 50¢

Glue Pots-See Pots, Glue.**Grease, Axle-**

Common Grade gro. \$5.00 @ 6.00
 Dixon's Everlasting, 10-lb. pails, ea. 85¢
 Dixon's Everlasting, in bxs., 1/2 doz. 1 lb. \$1.20; 2 lb. \$2.00

Snow Flake:

1 qt. cans, per doz. \$2.00; 2 qt., \$3.20; 3 gal. cans, per doz. \$6.00; 5 gal. \$16.00; 5 gal. \$24.00

Grindstones-

Bi-cycle Grindstones, each \$2.50 @ 3.00
 Pike Mfg. Co.
 Improved Family Grindstones, per chuk, per doz. \$2.00 @ 3.00
 Pike Mow: Knife and Tool Grinder, each \$9.00
 Velox Ball Bearing, mounted, Angle Iron Frames each, \$2.35

Guards, Snow-

Cleveland Wire Spring Co.:
 Galv. Steel 1/2 1000 \$9.00
 Copper 1/2 1000 \$13.00

Gun Powder-See Powder.**Hack Saws-See Saws.****Hafts, Awi-**

Peg Patent, Leather Top \$4.50 @ 5.50
 Peg Patent, Plain Top \$3.50 @ 3.75
 Sewing, Brass Ferrule \$1.50 @ 1.50
 Saddlers', Brass Ferrule \$1.50 @ 1.50
 Peg, Common \$1.50 @ 1.50
 Brad, Common \$1.50 @ 1.50

Halters and Ties-

Covert Mfg. Co.:
 Web 45¢ 45¢
 Jute Rope 45¢ 45¢
 Sisal Rope 45¢ 45¢
 Covert's Saddle Works:
 Web and Leather Halters 70¢
 Jute and Manila Rope Halters 70¢
 Sisal Rope Halters 60¢ 45¢
 Jute, Manila and Cotton Rope Ties 70¢
 Sisal Rope Ties 60¢ 45¢

Hammers-

Handled Hammers-
 Heller's Machinists' 50¢ 50¢ 50¢
 Heller's Farriers' 50¢ 50¢ 50¢
 Hagette Tack, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Handled Hammers-

Heller's Machinists' 50¢ 50¢ 50¢
 Heller's Farriers' 50¢ 50¢ 50¢
 Hagette Tack, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Handled Hammers-

Heller's Machinists' 50¢ 50¢ 50¢
 Heller's Farriers' 50¢ 50¢ 50¢
 Hagette Tack, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34

Ladies—Melting—

P. S. & W. 25%
 Reading 40@40@10%
 Sargent's 50@10%
 Sargent's 40@40@10%

Lanterns—Tubular—

Regular Tubular... doz. \$4.50@5.00
 Side Lift Tubular... doz. \$4.75@5.25
 Square Lift Tubular... doz. \$4.75@5.25
 Other styles... doz. \$4.00@4.50

Bull's Eye Police—

No. 1, 2 1/2 inch... \$3.60
 No. 2, 3 inch... \$4.00

Latches, Thumb—

Ruggin's Latches... doz. \$2@3.50

Lawn Mowers—

See Mowers, Lawn.

Leaders Cattle—

Small... doz. 50c; large, 55c
 Covert Mfg. Co. 42@52

Lemon Squeezers—

See Squeezers, Lemon.

Lifters, Transom—

Solid Grip, Rayson Mfg. Co. 80%
 R. & E. 40%

Lines—

Wire Clothes, Nos. 18 19 20
 100 feet... \$1.20 \$1.00 \$1.65
 75 feet... \$1.80 1.70 1.30

Ossawau Mills—

Crown Solid Braided Chalk... 33@35
 Mason's, No. 0 to No. 5... 33@35
 Sanson Cordage Works... 40%
 Solid Braided Chalk, No. 0 to 3... 40%
 Silver Lake Braided Chalk, No. 0, 1, 2, 3... \$1.00; No. 1, \$1.50; No. 2, \$2.00; No. 3, \$2.50

Locks—Cabinet—

Cabinet Locks... 35@38

Door Locks, Latches, &c.—

[Net prices are very often made on these goods.]

Reading Hardware Co. 40%
 R. & E. Mfg. Co. 40@40@10%
 Sargent & Co. 40@40@10%

Elevator—

Stowell's... 39@41

Padlocks—

Wrought Iron... 80@80@10%
 R. & E. Mfg. Co. Wrt. Steel and brass 50%

Sash, &c.—

Bronze and Brass... 60@62
 Iron... 70%

Ives' Patent—

Bronze and Brass... 60@62
 Iron... 70%

Payson's Signal—

Reading... 60@10@10@70%

Machines—Boring—

Without Augers.
 Upright. Angular.
 Improved No. 3... \$4.25 No. 1 \$5.00
 Improved No. 4... 3.75 No. 2 3.38
 Improved No. 5... 2.75
 Jennings' 2.50 3.00
 Miller's Falls... 5.75
 Snell's, Rice's Pat. 2.50 2.75
 Swan's, No. 500... 5.10 No. 200 6.45

Hoisting—

Moore's Anti-Friction Differential Pulley Block... 30%
 Moore's Hand Hoist, with Lock Brake... 20%
 Moore's Portable Pneumatic Hoist... 30%

Ice Cutting—

Chandler's... 15%

Washing—

Wayne American... \$ doz. \$28.00
 Western Star, No. 2... \$ doz. 38.00
 Western Star, No. 3... \$ doz. 30.00
 St. Louis, No. 41... \$ doz. 60.00

Mallets—

Hickory... 45@50
 Lignum vitae... 45@50
 Timmer's, Hickory and Applewood, doz. 50@55c

Mats—Door—

Elastic Steel (W. G. Co.)... 10%

Mattocks—

See Picks and Mattocks.

Meat Cutters—

See Cutters, Meat.

Milk Cans—See Cans, Milk**Mills—Coffee—**

Enterprise Mfg. Co. 25@30%
 National, list Jan. 1, '01... 30%
 Parker's Columbia and Victor... 50@10@60%
 Swift, Lane Bros. 50@10@60%

Mining Knives—

See Knives, Mining.

Molasses Cates—

See Cates, Molasses.

Money Drawers—

See Drawers, Money.

Mowers, Lawn—

Net prices are generally quoted.

Cheap... all sizes, \$1.50@2.10
 Good... all sizes, \$2.50@3.75

High Grade 4 1/2 4 50 4 75
 Continental... 60@10@5%
 Great American... 60@10@5%
 Great American Ball Bearing... 60@10@5%
 Quaker City... 70@5%
 Pennsylvania... 60@10@5%
 Pennsylvania Horse... 50%
 Pennsylvania Pony... 40%
 Philadelphia... 40%

Styles A, S, C, K, T... 70@5%
 Style A, all Steel... 60@10%
 Style E, Low Wheel... 60@10%
 Style E, High Wheel... 70@10@5%
 Drexel and Gold Coin, low list... 50@5%

Nails—

Cut and Wire. See Trade Report.

Wire Nail and Brads, Papered.

List July 10, 1899... 85@10%

Hungarian, Finishing, Upholster—

See Tacks.

Horse—

Nos. 6 7 8 9 10
 A. C. 25% 23% 22% 21% 21% 40@5%
 Ausable... 28% 28% 25% 24% 23% 50@10%
 Capewell... 19% 18% 17% 16% 16% 10@25%
 C. B. K... 25% 25% 23% 21% 21% 40%
 Champlin... 28% 28% 25% 24% 23% 40@10@5%

Clinton... 19% 17% 16% 15% 14% 80@10@5%
 Maud S... 25% 23% 22% 21% 21% 50%
 Neponset... 23% 21% 20% 19% 18% 40%
 Putnam... 23% 21% 20% 19% 18% 38@%
 Vulcan... 23% 21% 20% 19% 18% 35@10%
 Amer. can. Nos. 5 to 10... 40@9@4%
 Jobbers' special brands... per lb. 8@9c

Picture—

Brass Head... 1 1/2 2 3/4 3 5 1/2 in.
 For. Head... 1.10 1.10 1.10... gro.

Nippers, See Pliers and Nippers.**Nut Crackers—**

See Crackers, Nut.

Nuts—

Cold Punched... Off

Mfrs. or U. S. Standard. list.

Hexagon, plain... 6.80c

Square, plain... 6.40c

Square, C. T. & R... 6.80c

Hexagon, C. T. & R... 6.80c

Hot Pressed:

Mfrs., U. S. or Nar. Gauge Stand.

Square Blank or Tapped... 5.60c

Hexagon Blank or Tap'd... 6.30c

Oakum—

Best or Government... lb. 6 1/4c

Navy... lb. 5 c

U. S. Navy... lb. 5 1/4c

Plumbers' Spun Oakum... 3 1/4c

In carload lots 1/4c lb. off f.o.b. New York.

Oil, Axle—

Snow Flake:

1 pt. cans, per doz. \$3.00

1 qt. cans, per doz. \$4.80

1 gal. cans, per doz. \$15.00

5 gal. cans, per doz. \$68.00

Oil Tanks—See Tanks, Oil.

Oilers—

Brass and Copper... 10@10@50%

Tin or Steel... 60@10@55%

Zinc... 60@10@55%

Paragon:

Brass and Copper... 10@10@50%

Tin or Steel... 60@10@55%

Zinc... 60@10@55%

Malleable, Hammers' Improved, No. 1, \$3.60; No. 2, \$4; No. 3, \$4.40; No. 4, \$5.00

Malleable, Hammers' Old Pattern, same list... 50@10%

Wilmot & Hobbs Mfg. Co. 70@70@10%

Spring Bottom Cans... 70@70@10%

Railroad Oilers etc... 60@60@10%

Oponers—Can—

French... doz. 35c

Iron Handle... doz. \$5@7c

Sprague, Iron Hdl... per doz. \$6@10c

Sardine Scissors... doz. \$1.75@3.00

Tip Top... per doz. \$0.75

National, \$ gro. \$1.75@2.00

Stowell's... per doz. 40@45c

Waldorf, \$ gro. \$8.25

Egg—

Nickel Plate... per doz. \$2.25

Silver Plate... per doz. \$3.50

Packing—

Asbestos Packing, Wick and Rope, 18c lb.

Rubber—

Sheet, C. I... 8@15%

Sheet, C. O. S... 9@15%

Sheet, C. B. S... 10@14%

Sheet, Pure Gum... 10@14%

Sheet, Red... 10@14%

Sheet, Standard, \$ 80... 35@35@5%

Miscellaneous—

American Packing... 9@10c lb.

Cotton Packing... 13@14c lb.

Italian Packing... 10@11c lb.

Jute... 3 1/2@5c lb.

Russia Packing... 12@13c lb.

Pails—

S. S. & Co., with gauges. No 1 \$3.50;

No. 2, \$3.75 per doz.

Galvanized—

Price per gro.

Quart. 10 12 14

Water, Regular... 18.00 \$1.00 \$2.00

Water, Heavy... 21.00 \$2.00 \$3.00

Fire, Rd. Bottom... 31.00 \$3.00 \$5.00

Well... 27.00 \$2.00 \$1.00

Pans—

Dripping—

Standard List... 60@5@60@10@5%

Fry—

Common Lipped:

No. 1 2 3 4 5

Per doz. \$0.50 .75 .85 .95 1.15

Roasting and Baking—

Regal, S. S. & Co., \$ doz. Nos. 5, \$4.50;

12, \$5.00; 20, \$5.50; 30, \$6.00

Simplex, \$ gro. No. 40 \$39.00; 50,

\$34.50; 60 \$39.00; 140, \$33.00; 150,

\$37.50; 160, \$43.00.

Paper—

Building Paper—

Asbestos: lb.

Building Felt... 3c

Mill Board, sheet, 1/2 to 1 1/2 inches... 1c

Mill Board, roll, thicker than 1-16

inch... 1c

Mill Board, roll, 1-16 in. thick and

less... 3c

Per roll

Rosin Sized Sheathing: 500 sq. ft.

Light wt., 20 lbs. to roll... \$0.35

Medium wt., 30 lbs. to roll... \$0.47

Heavy wt., 40 lbs. to roll... \$0.53

Medium Grades Water Proof

Sheathing... \$0.65@1.15

Deafening Felt, 9, 6 and 1 1/2 sq. ft.

to lb. ton... \$36.00@37.00

Red Rope Roofing, 250 sq. feet per

roll... \$1.65

Tarred Paper.

1 ply (roll 300 sq. ft.), ton... \$26.00@27.00

2 ply, roll 108 sq. ft. 50c

3 ply, roll 108 sq. ft. 70c

Slater's Felt (roll 500 sq. ft.)... 50@60c

R. R. M. Stone Surfaced roofing (roll

110 sq. ft.)... \$2.75

Sand and Emery—

List Dec. 23, 1899... 50@10@50@10@10%

Parers—Apple—

Advance... \$ doz. \$4.50

Baldwin... \$ doz. \$5.00

Bonanza... each \$5.00

Dandy... each \$7.50

Eureka, 1898... each \$16.00

Family Bay State... \$ doz. \$12.00

Hudson's Little Star... \$ doz. \$5.50

Hudson's Rocking Table... \$ doz. \$5.50

Improved Bay State \$ doz. \$27.00@30.00

New Lightning... \$ doz. \$5.50

Reading 72... \$ doz. \$4.00

Reading 78... \$ doz. \$7.00

Turn Table '98... \$ doz. \$5.50

White Mountain... \$ doz. \$4.00

Potato—

Saratoga... \$ doz. \$5.50

White Mountain... \$ doz. \$4.50

Paris Green—

In Arsenic kegs or casks... 15@4c

In kegs, 100 to 175 lbs... 13 c

In kits, 14, 28, 56 lbs... 14 c

In paper boxes, 2 to 5 lbs... 14 c

In paper boxes, 1 lb... 14 1/2c

In paper boxes, 1/2 lb... 15 1/2c

In paper boxes, 1/4 lb... 16 1/2c

Picks and Mattocks—

List Feb. 23, 1899... 70@10@70@10@5%

Pinking Irons—

See Irons, Pinking.

Pins—Escutcheon—

Brass... 60%

Iron, list Nov. 11, '85... 60%

Pipe, Cast Iron Soil—

Factory Shipments—Carload lots.

often shaded by jobbers \$0.50 @ 1.00, and common, Plain Black Shingles are generally sold by jobbers at \$6.75.

Sieves and Sifters
Hunter's Imitation, gro. \$9.50 @ 10.00
Buffalo Metallic Blued, S. & Co., \$ gr. 14.16 16.18 18.20
\$12.90 \$13.80 \$15.00
F. J. Meyers' Mfg. Co.:
Eclipse, \$ gr. \$9.25
Excelsior, \$ gr. \$10.35
Hunter's Genuine, \$ gr. \$11.50
No Name, Hunter's, \$ gr. \$11.50
Standard, \$ gr. \$10.35
Shaker (Barber's Pat.) Flour Sifters,
\$ doz., \$8.00

Sieves, Tin Rim
Per dozen
Mesh, 1 1/2 1 3/4 1 5/8 2 0
Black, full size, \$0.98 1.08 1.10 1.10
Plated, full size, \$1.05 1.05 1.10 1.10
Black, scant, \$0.78 0.80 0.85

Sieves, Wooden Rim
Nested, 10, 11 and 12 Inch
Mesh 18, Nested, doz. \$0.65 @ 0.75
Mesh 20, Nested, doz. 75 @ .85
Mesh 30, Nested, doz. 90 @ 1.00

Sinks
Cast Iron—
Standard list, \$65 @ 65 @ 100
Note.—There is not entire uniformity
in use by jobbers.

Wrought Steel
New Era, Galv'd and Enamelled, 70x55
New Era, Painted, 50x100
L. & G. Mfg. Co., Galv'd, 50x100
L. & G. Mfg. Co., Enamelled, 50x100

Skins, Wagon
Cast Iron, 70x10 @ 75x
Malleable Iron, 40x10 @ 50x
Steel, 40x10 @ 100x

"D" Slates
Unexcelled Noiseless Slates, 6x10 @ 10
@ 10 @ 10 @ 50 @ 100 @ 100 @ 100
Wire Bound, 35 @ 40 @ 50
Double Slates, add \$1 case, net.

Slaw Cutters—See Cutters.
Slicers, Vegetable
Sterling \$ 3.00, net. 33 @ 35

Snaps, Harness
German, 40 @ 40 @ 100
Covert Mfg. Co.:
Derby, 35 @ 35
High Grade, 45 @ 45
Jockey, 40 @ 40
Trojan, 45 @ 45
Yankee, 35 @ 35
Yankee, Roller, 30 @ 30

Covert's Saddlery Works:
Crown, 60x
German, 60x
Model, 60x
Triumph, 60x

W. & E. T. Fitch Co.:
Empire, 40 @ 100
German, 40x
National, 50 @ 55
Perfect, 45x
Clipper, 50 @ 55
Champion, 40x
Security, 40x
Victor, 60 @ 55

Onida Community:
Solid Steel, 55 @ 55 @ 100
Solid 3 wire, 55 @ 100 @ 100 @ 100
Sargent's Patent Guarded, 60 @ 100

Snaths
Soythe, 45 @ 50 @ 80
Snips, Tinner's—See Shears
Soldering Irons
See Irons, Soldering.

Spoke Trimmers
See Trimmers, Spoke.
Spoons and Forks
Silver Plated—

Good Quality, 50 @ 10 @ 60 @ 10 @ 55
Cheap, 60 @ 10 @ 60 @ 10 @ 55
International Silver Co.:
1847 Rogers Bros, 40 @ 100
Rogers & Bros, William Rogers Eagle
Brand, and Rogers & Hamilton, 50 @ 100
Anchor, Rogers Brand, 60 @ 100
Wm. Rogers & Son, 60 @ 100
Simeon L. & Geo. H. Rogers Co.,
Silver Plated Flat Ware, 60x
No. 17 Silver Plated Ware, 60 @ 100

Miscellaneous
German Silver, 60 @ 10 @ 60 @ 10 @ 100
Simeon L. & Geo. H. Rogers Co.,
German or Nickel Silver, Special list
L. & G.

Tinned Iron
Teas, 45 @ 50 @ 50
Tables, 90 @ 90 @ 1.00

Springs
Door—
Gem (Coll), 30x
Star (Coll), 30x
Torrey's Rod, 99 in, \$ doz. \$1.10 @ 1.25
Victor (Coll), 50 @ 10 @ 100

Carriage, Wagon, &c.
Factory Shipments
1 1/4 in and wider—Blk, Hf. Brt, Brt.
5 1/4 5 1/2 6 1/2 lb

Sprinklers, Lawn
Enterprise, 25 @ 90
Philadelphia No. 1, \$ doz. \$12 @ 12
\$15; No. 3, \$24

Squares
Nickel plated, List Jan. 5, 1900
Steel and Iron, 70 @ 10 @ 75 @ 55
Rosewood Hd Try Square and T-Bevels
10 @ 10 @ 10 @ 10 @ 70
Iron Hd. Try Squares and T-Bevels
10 @ 10 @ 10 @ 10 @ 100
Dixton's Try Sq. and T-Bevels, 60 @ 100
Winterbottom's Try and Miter, 50 @ 100

Squeezers
Lemon—
Wood, Common, gro. No. 2, \$5.25
@ \$5.80; No. 1, \$5.25 @ \$6.50
Wood, Porcelain Lined:
Cheap, doz. \$2.00 @ 2.75
Good Grade, doz. \$3.00 @ 3.50
Tinned Iron, doz. \$0.75 @ 1.25

Iron, Porcelain Lined doz. \$3.90 @ 5.25
Jeanings' Star, \$ doz. \$1.85 @ 1.90

Staples
Barbed Blind, 1b. 7 @ 7 1/2
Electricians', Association list, 10 @ 10
80 @ 10 @ 10 @ 10
Fence Staples, same price as Barbed
Wire. See Trade Report.
Poultry Netting, Staples, per lb.,
\$1 @ \$1 1/2

Grand Crossing Tack Co.'s list, 80 @ 100
Steels, Butchers'
Dick's, 30x
Foster Bros, 30x
O. & A. Hoffmann's, 40x

Steeleyards
35 @ 35 @ 100

Stocks and Dies
Blacksmiths, 40 @ 40 @ 100
Gardner Die Stocks No. 1, 50x
Gardner Die Stocks, larger sizes, 40x
Green River, 25x
Lightning Screw Plate, 25x
Little Giant, 25x
No. 1 Indian Pond S. S., 40x
Reece's New Screw Plates, 25 @ 30x
Curtis Reversible Ratchet Die Stock, 25x

Stone
Soythe Stones
Chicago Wheel & Mfg. Co.:
Gem Corundum, 10 inch, \$3.00 per
gro., 12 inch, \$3.50
Pike Mfg. Co. 1901 list:
Black Diamond S. S., \$ gro. \$12.00
Lamond S. S., \$ gro. \$11.00
White Mountain S. S., \$ gro. \$8.00
Green Mountain S. S., \$ gro. \$6.00
Extra Indian Pond S. S., \$ gro. \$7.50
No. 1 Indian Pond S. S., \$ gro. \$7.00
Leader Red End S. S., \$ gro. \$4.50
Balance of 1901 list \$3.50

Oil Stones, &c.
Chicago Wheel & Mfg. Co. 1901 list:
Gem Corundum Oil, Double Grit, 50x
Gem Corundum Ace, Single or Double
Grit, 50x
Gem Corundum Slips, 55x
Gem Corundum Razor Hones, 55x
Pike Mfg. Co. 1901 list:
Arkansas Stone, No. 1, 5 to 5 1/2 in, \$3.50
Arkansas Stone, No. 1, 5 to 5 1/2 in, \$4.00
Lily White Washita 4 to 8 in, 60x
Royal Red Washita 4 to 8 in, 60x
Washita Stone, Extra, 4 to 8 in, 50x
Washita Stone, No. 1, 4 to 8 in, 40x
Washita Stone, No. 2, 4 to 8 in, 30x
Lily White Slips, 90x
Washita Slips, 90x
Washita Slips, No. 1, 70x
Washita Slips, No. 1, 70x
Hindustan No. 1, Regular, \$ 8 @ 8 @ 10
Hindustan No. 1 Small, \$ 10 @ 10 @ 10
Ark Stone (all kinds), 40x
Turkey Oil Stones, 5 to 5 1/2 in, \$ 8 @ 8 @ 10
Queer Creek Stones, 4 to 8 in, 40x
Queer Creek Slips, 40x
Sand Stone, 50x
Belgian, German and Swaty Razor
Hones, 40x
Natural Grit Carving Knife Hones,
\$ doz., \$8.00
Quick Edge Pocket Knife Hones,
\$ doz., \$8.00
Mounted Kitchen Sand Stone,
\$ doz., \$1.50

Tanite Mills:
Emery Oil, \$ doz. \$5.00, 50 @ 60x

Stones—Cherry
Enterprise, 25 @ 30x
Stops, Bench
Millers Falls, 15 @ 100
Morrill's, \$ doz. \$10.00, 50 @ 100
Morrill's, No. 2, \$11.00, 50 @ 100

Stops, Window
Ives' Patent, 35 @ 35
Stove Boards
See Boards, Stove.

Stove Polish—See Polish, Stove.
Strainers Pump
Diamond Joe Pump Strainers, per doz. 75x

Straps, Box
Cary's Universal, case lots, 20 @ 100

Stretchers, Carpet
Cast Iron, Steel Points, doz. 55 @ 65x
Socket, doz. \$1.75

Strops, Razor
Smith & Hemenway Co., 70x

Stuffers, Sausage
Enterprise Mfg. Co., 25 @ 25 @ 75x
National Specialty Mfg. Co., list Jan.
1, '97, 80x

Tacks Brads, &c.
List Jan. 15, '99.
Carpet Tacks, American 90 @ 30 @ 55
American Cut Tacks, 90 @ 30 @ 55
Swedes Iron Tacks, 90 @ 30 @ 55
Swedes Upholsterers' Tacks, 90 @ 30 @ 55

Gimp Tacks, 90 @ 30 @ 55
Lace Tacks, 90 @ 30 @ 55
Trimmers' Tacks, 90 @ 30 @ 55
Looking Glass Tacks, 70 @ 100
Bill Posters' and Railroad Tacks,
90 @ 30 @ 55

Hungarian Nails, 80 @ 18x
Common and Patent Brads, 80 @ 100
Trunk and Clout Nails, 80 @ 100
NOTE.—The above prices are for
straight weights. An extra 5% is given
Standard Weights, and an extra 10 @ 25 on

Miscellaneous
Double Point Tacks, 90 @ 50 or 7 tens
Steel Wire Brads, R. & E. Mfg.
Co.'s list, 50 @ 10 @ 60x
See also Nails, Wire.

Tanks, Oil
Emerald, S. S. & Co., 60-gal. \$3.90
Emerald, S. S. & Co., 60-gal., \$4.00
Queen City S. S. & Co., 60-gal., \$3.50
Queen City S. S. & Co., 60-gal., \$4.25

Tapes, Measuring
American Asses' Skin, 40 @ 10 @ 30x
Patent Leather, 15 @ 30 @ 55x
Steel, 10 @ 10 @ 55x
Chesterman's, 15 @ 30 @ 55x
Eddy's Steel, 40 @ 10 @ 55x
Eddy's Metallic, 35 @ 35 @ 55x
Kaufel & Easer Co. Steel and Metallic,
Lower list, 1890, 35x
Larkin's Steel, 35 @ 35 @ 55x
Larkin's Metallic, 30 @ 30 @ 55x

Thermometers
Tin Case, 50 @ 10 @ 30 @ 10 @ 55x

Ties, Bale—Steel
Standard Wire, 50 @ 10 @ 55x

Ties, Wall
Cleveland Wire Spinning Co.:
Galv. Steel 5-32 x 5 1/2 in. 1000, \$10.00
Galv. Steel 5-32 x 5 1/2 in. 1000, \$11.00
Galv. Steel 5-32 x 1 1/4 in. 1000, \$12.00
Galv. Steel 5-32 x 1 1/4 in. 1000, \$14.00

Tinner's Shears, &c.
See Shears, Tinner's, &c.

Tinware
Stamped, Japanned and Pieced, sold
very generally at net prices.

Tire Benders, Upsetters,
&c.—See Benders and Upset-
ters, Tire.

Tobacco Cutters
See Cutters, Tobacco.

Tools—Coopers'
L. & J. White, 30 @ 30 @ 55x

Saw
Atkins' Cross Cut Saw Tools, 40x
Simonds' Improved, 38 @ 38x
Simonds' Crescent, 25x

Ship
L. & J. White, 25x

Transom Lifters
See Lifters, Transom.

Traps—Game
Oneida Pattern, 75 @ 5 @ 75 @ 10 @ 55x
Newhouse, 45 @ 45 @ 55x
Hawley & Norton, 65 @ 5 @ 65 @ 100x
Victor (Oneida Pattern), 75 @ 75 @ 55x
Star (Blake Pattern), 65 @ 10 @ 70 @ 55x

Mouse and Rat
Mouse, Wood, Choker, doz. holes, 8 1/2 @ 90
Mouse, Round or Square Wire, doz. 80 @ 1.00

American Pattern French Rat and Mouse
Trap:
No. 1, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 2, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 3, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 4, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 5, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 6, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 7, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 8, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 9, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 10, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 11, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 12, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 13, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 14, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 15, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 16, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 17, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 18, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 19, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 20, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 21, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 22, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 23, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 24, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 25, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 26, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 27, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 28, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 29, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 30, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 31, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 32, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 33, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 34, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 35, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 36, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 37, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 38, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 39, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 40, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 41, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 42, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 43, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 44, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 45, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 46, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 47, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 48, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 49, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 50, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 51, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 52, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 53, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 54, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 55, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 56, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 57, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 58, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 59, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 60, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 61, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 62, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 63, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 64, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 65, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 66, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 67, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 68, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 69, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 70, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 71, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 72, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 73, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 74, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 75, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 76, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 77, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 78, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 79, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 80, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 81, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 82, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 83, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 84, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 85, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 86, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 87, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 88, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 89, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 90, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 91, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 92, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 93, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 94, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 95, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 96, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 97, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 98, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 99, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 100, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00

Mouse, Round or Square Wire, doz. 80 @ 1.00

American Pattern French Rat and Mouse
Trap:
No. 1, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 2, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 3, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 4, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 5, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 6, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 7, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 8, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 9, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 10, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 11, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 12, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 13, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 14, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 15, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 16, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 17, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 18, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 19, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 20, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 21, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 22, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 23, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 24, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 25, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 26, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 27, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 28, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 29, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 30, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 31, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 32, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 33, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 34, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 35, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 36, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 37, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 38, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 39, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 40, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 41, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 42, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 43, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 44, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 45, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 46, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 47, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 48, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00
No. 49, Detroit Martv Pattern, \$ doz. 4.50; in 1/2 gro. lots, \$4.00

**Washers—
Leather, Axle—**

Solid..... $\$5.00$ to $\$5.10$
Patent..... $\$5.10$ to $\$5.20$
Coil: 1 1/2 1 3/4 1 1/2 1 3/4
100 110 120 130 per 100

Iron or Steel—

Size bolt... 1/2 3/4 1 1 1/2 2 2 1/2
Washers... $\$5.80$ 4.50 5.00 5.80 6.00
In lots less than one keg add 1/4c per
lb., 5-lb. boxes add 1/4c to list.

Cast Washers—

Over 1/4 inch, barrel lots, per lb..... $\$1.40$ to $\$1.45$

**Washer Cutters—
See Cutters, Washer.**

**Washing Machines—
See Machines, Washing.**

**Water Coolers—
See Coolers, Water.**

Wedges—

Oil Finish.....lb. $\$2.90$ to $\$3.10$
Weights, Sash—
Per ton, f.o.b. factory..... $\$19.00$ to $\$22.50$
Some foundries make price $\$1$ to $\$2$
lower.

**Well Buckets, Galvanized
See Pails, Galvanized.**

Wheels Well—

3-in., $\$1.85$ to $\$1.75$; 10-in., $\$2.00$ to $\$2.10$
12-in., $\$2.50$ to $\$2.75$; 14-in., $\$3.25$ to $\$3.40$

Wire and Wire Goods—

Brt. and Ann., 6 to 9, 70¢ to 10¢ to 10¢ to 55¢
Brt. and Ann., 10 to 18, 75¢ to 75¢ to 10¢
Brt. and Ann., 19 to 26, 75¢ to 75¢ to 10¢
Brt. and Ann., 27 to 36..... $\$1.00$ to $\$1.10$

475¢ to 10¢ to 75¢ to 10¢ to 55¢
Cop'd and Galv., 6 to 9.....70¢ to 70¢ to 10¢
Cop'd and Galv., 10 to 18.....70¢ to 70¢ to 10¢
Cop'd and Galv., 19 to 26.....70¢ to 70¢ to 10¢
Cop'd and Galv., 27 to 36.....75¢ to 75¢ to 10¢

Tinned, 6 to 14.....75¢ to 75¢ to 10¢
Tinned, 15 to 18.....70¢ to 70¢ to 10¢
Tinned, 19 to 26.....70¢ to 70¢ to 10¢
Tinned, 27 to 36.....65¢ to 10¢ to 70¢
Annealed Wire on Spools.....70¢ to 10¢ to 55¢

Brass and Copper Wire on Spools.....60¢ to 50¢ to 10¢
Brass, list Feb. 26, '96..... $\$1.00$ to $\$1.10$

Copper, list Feb. 26, '96.....15¢
Cast Steel Wire.....60¢
Stub's Steel Wire..... $\$8.00$ to $\$8.40$
Wire Clothes Line, see Lines.
Wire Picture Cord, see Cord.

Bright Wire Goods—

List April 1, 1901.....35¢ to 10¢ to 55¢

Wire Cloth and Netting—

Galvanized Wire Netting.....35¢ to 35¢ to 55¢
Painted Screen Cloth per 100 ft..... $\$1.00$ to $\$1.10$

Light Hardware Grade:
3-18 Mesh, Plain (Sc. list) sq. ft.....14¢
3-8 Mesh, Galv. (Sc. list) sq. ft.....14¢

Wire Barb—See Trade Report.
Wire, Rope—See Rope, Wire.

Wrenches—

Agricultural.....70¢ to 10¢ to 75¢ to 55¢
Case lots.....75¢ to 10¢ to 55¢
Acme.....80¢ to 10¢ to 55¢
Alligator.....70¢
Baxter's S.....80¢ to 10¢ to 55¢
Bull Dog.....70¢
Bemis & Call's.....35¢ to 55¢
Adjustable S Pipe.....40¢
Brigg's Pattern.....50¢ to 10¢ to 55¢

Combination Black.....40¢ to 55¢
Combination Bright.....40¢ to 55¢
Cylinder or Gas Pipe.....40¢ to 55¢
Extra Heavy.....40¢ to 55¢
Merrick's Pattern.....40¢ to 55¢
No. 3 Pipe, Bright.....40¢ to 55¢
Bindley Automatic.....40¢ to 55¢
Boardman's.....40¢ to 55¢
Coe's Genuine.....40¢ to 55¢
Coe's "Mechanics".....40¢ to 55¢
Donohue's Engineer.....40¢ to 55¢
Eagle.....40¢ to 55¢
Gem Pocket.....40¢ to 55¢
Hercules.....40¢ to 55¢
Knife Handle, Machinist (W. & B.).....40¢ to 55¢
Case lots.....40¢ to 55¢
Less than case lots.....40¢ to 55¢
Improved Pipe (W. & B.).....40¢ to 55¢
Solid Handles, P. S. & W.....40¢ to 55¢
Triumph.....40¢ to 55¢

Wrought Goods—

Staples, Hooks, &c., list March 17
'97.....35¢ to 10¢ to 55¢ to 55¢

Yokes, Neck—

Covert Saddlery Works, Trimmed, 50¢ to 55¢
Covert Saddlery Works, Neck Yoke.....70¢
Centers.....70¢

Yokes, Ox, and Ox Bows—

Fort Madison's Farmers & Freighters'.....list and

Zinc—

Sheet.....lb. 5¢ to 6¢

PAINTS, OILS AND COLORS.—Wholesale Prices.

White Lead, Zinc, &c.

Lead, Foreign white, in Oil.....74¢ to 94¢
Lead, American White, in Oil:
Lots of 500 lb or over..... $\$1.00$ to $\$1.10$
Lots less than 500 lb.....74¢ to 94¢

Lead, White, in oil, 25 lb tin
pails, add to keg price..... $\$1.00$ to $\$1.10$
Lead, White, in oil, 13 1/2 lb tin
pails, add to keg price..... $\$1.00$ to $\$1.10$

Lead, White, in oil, 1 to 5 lb as-
sorted tins, add to keg price..... $\$1.00$ to $\$1.10$
Lead, White, Dry in bbls.....54¢ to 64¢
Lead, American, Terms: On lots of 500
lbs. and over, 60 days, or 25 for cash if
paid in 15 days from date of invoice.

Zinc, American, dry.....74¢ to 94¢
Zinc, Paris, Red Seal, dry.....84¢ to 94¢
Zinc, Paris, Green Seal, dry.....84¢ to 94¢
Zinc, Antwerp, Red Seal, dry.....84¢ to 94¢
Zinc, Antwerp, Green Seal, dry.....84¢ to 94¢
Zinc, V. M. French, in Poppy Oil,
Green Seal:
Lots of 1 ton and over.....124¢ to 124¢
Lots of less than 1 ton.....124¢ to 124¢
Zinc, V. M. French, in Poppy Oil,
Red Seal:
Lots of 1 ton and over.....124¢ to 124¢
Lots of less than 1 ton.....124¢ to 124¢
Discounts.—V. M. French Zinc.—Dis-
counts to buyers of 10 bbl. lots of one or
assorted grades, 15: 25 bbls., 25: 50
bbls., 45.

Dry Colors.

Black, Carbon.....74¢ to 94¢
Black, Drop, Amer.....44¢ to 74¢
Black, Drop, Eng.....74¢ to 94¢
Black, Ivory.....124¢ to 124¢
Lamp, Com.....124¢ to 124¢
Blue, Celestial.....34¢ to 64¢
Blue, Chinese.....30¢ to 30¢
Blue, Prussian.....28¢ to 34¢
Blue, Ultramarine.....44¢ to 44¢
Brown, Spanish.....14¢ to 14¢
Brown, Vandyke, Amer.....14¢ to 14¢
Brown, Vandyke, Foreign.....14¢ to 14¢
Carmine, No. 40.....74¢ to 94¢
Green, Chrome, ordinary.....54¢ to 64¢

Green, Chrome, pure.....16¢ to 29¢
Lead, Red, bbls. 1/4 bbls. and kegs:
Lots 500 lb or over.....64¢ to 64¢
Lots less than 500 lb.....64¢ to 64¢
Litharge, bbls. 1/4 bbls. and kegs:
Lots 500 lb or over.....64¢ to 64¢
Lots less than 500 lb.....64¢ to 64¢
Ocher, French Washed.....14¢ to 14¢
Ocher, Dutch Washed.....14¢ to 14¢
Ocher, American.....84¢ to 104¢
Orange Mineral, English.....84¢ to 114¢
Orange Mineral, French.....84¢ to 114¢
Orange Mineral, German.....84¢ to 94¢
Orange Mineral, American.....84¢ to 84¢
Red, Indian, English.....44¢ to 64¢
Red, Indian, American.....84¢ to 84¢
Red, Turkey, English.....44¢ to 64¢
Red, Tuscan, English.....44¢ to 64¢
Red, Venetian, Amer.....74¢ to 104¢
Red, Venetian, English.....74¢ to 104¢
Sienna, Italian, Burnt and
Powdered.....34¢ to 74¢
Sienna, Ital., Raw, Powd.....34¢ to 74¢
Sienna, American, Raw.....14¢ to 94¢
Sienna, American, Burnt and
Powdered.....14¢ to 94¢
Talc, French.....104¢ to 124¢
Talc, American.....90¢ to 110¢
Terra Alba, French.....95¢ to 110¢
Terra Alba, English.....95¢ to 110¢
Terra Alba, American No. 1.....65¢ to 85¢
Terra Alba, American No. 2.....45¢ to 65¢
Umber, Turkey, Bnt. & Pow.....24¢ to 34¢
Umber, Turkey, Raw & Powd.....24¢ to 34¢
Umber, Bnt. Amer.....14¢ to 24¢
Umber, Raw, Amer.....14¢ to 24¢
Yellow, Chrome.....104¢ to 124¢
Vermilion, American Lead.....104¢ to 124¢
Vermilion, Quicksilver, bulk.....67¢ to 67¢
Vermilion, Quicksilver, bags.....67¢ to 67¢
Vermilion, English, Import.....50¢ to 95¢
Vermilion, Chinese.....104¢ to 124¢

Colors in Oil.

Black, Lampblack.....12¢ to 14¢
Blue, Chinese.....26¢ to 26¢
Blue, Prussian.....22¢ to 36¢
Blue, Ultramarine.....13¢ to 16¢

Brown, Vandyke.....94¢ to 113¢
Green, Chrome.....16¢ to 29¢
Green, Paris.....24¢ to 24¢
Sienna, Raw.....104¢ to 113¢
Sienna, Burnt.....104¢ to 113¢
Umber, Raw.....94¢ to 113¢
Umber, Burnt.....94¢ to 113¢

Miscellaneous.

Barytes, Foreign, 1/2 ton.....104¢ to 104¢
Barytes, Amer. floated.....104¢ to 104¢
Barytes, Crude, No. 1.....94¢ to 104¢
Chalk, in bulk.....24¢ to 27¢
Alligator.....70¢
China Clay, English.....124¢ to 175¢
Cobalt, Oxide.....104¢ to 104¢
Whiting, Common.....40¢ to 40¢
Whiting, Gilders.....45¢ to 65¢
Whiting, extra Gilders.....55¢ to 65¢

Putty.

In bladders.....14¢ to 14¢
In cans, 12 lb to 25 lb.....32¢ to 32¢
In cans, 1 lb to 5 lb.....32¢ to 32¢

Spirits Turpentine.

In Southern bbls.....374¢ to 384¢
In machine bbls.....384¢ to 384¢

Glue.

Low Grade.....74¢ to 94¢
Cabinet.....114¢ to 114¢
Medium White.....144¢ to 164¢
Extra White.....184¢ to 184¢
French.....194¢ to 194¢
Irish.....134¢ to 164¢

**Animal, Fish and Vege-
table Oils.**

Linseed, City, raw.....74¢ to 71¢

Linseed, City, boiled.....74¢ to 74¢
Linseed, State and West'n, raw.....74¢ to 74¢
Linseed, raw Calcutta seed.....74¢ to 74¢
Lard, Prime.....44¢ to 44¢
Lard, Extra No. 1.....44¢ to 44¢
Lard, No. 1.....44¢ to 44¢
Cotton-seed, Crude.....44¢ to 44¢
Cotton-seed, Summer Yellow,
prime.....44¢ to 44¢
Cotton-seed, Summer Yellow,
off grades.....37¢ to 37¢
Sperm, Crude.....37¢ to 37¢
Sperm, Natural Spring.....37¢ to 37¢
Sperm, Bleached Spring.....37¢ to 37¢
Sperm, Natural Winter.....37¢ to 37¢
Sperm, Bleached Winter.....37¢ to 37¢
Whale, Crude.....44¢ to 44¢
Whale, Natural Winter.....44¢ to 44¢
Whale, Bleached Winter.....44¢ to 44¢
Menhaden, Crude, Sound.....44¢ to 44¢
Menhaden, Light Strained.....44¢ to 44¢
Menhaden, Bleached Winter.....44¢ to 44¢
Menhaden, Ex Bleached Winter.....44¢ to 44¢
Tallow, prime.....44¢ to 44¢
Cocoanut, Ceylon.....44¢ to 44¢
Cocoanut, Cochin.....44¢ to 44¢
Cod, Domestic.....44¢ to 44¢
Cod, Newfoundland.....44¢ to 44¢
Red Elaine.....44¢ to 44¢
Red Saponified.....44¢ to 44¢
Olive, Italian, prime.....44¢ to 44¢
Neatsfoot, prime.....44¢ to 44¢
Palm, prime, Lagos.....44¢ to 44¢

Mineral Oils.

Black, 20 gravity, 25 to 30 cold
test.....104¢ to 104¢
Black, 20 gravity, 15 cold test.....104¢ to 104¢
Black, summer.....104¢ to 104¢
Cylinder, light filtered.....114¢ to 114¢
Cylinder, dark filtered.....114¢ to 114¢
Paraffine, 903-907 gravity.....114¢ to 114¢
Paraffine, 903 gravity.....114¢ to 114¢
Paraffine, 883 gravity.....114¢ to 114¢
Paraffine, red, No. 1.....114¢ to 114¢
In small lots 1/4 advance.

THE IRON AGE.

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades,
and a standard authority on all matters relating to those branches of industry.

RATES OF SUBSCRIPTION: INCLUDING POSTAGE.

UNITED STATES AND BRITISH AMERICA.

Regular Edition, issued every THURSDAY MORNING.....\$5.00 a year
Two Dollar Edition, large number FIRST and THIRD THURSDAYS of every month, Bulletin number each intervening Thursday, 2.00 "
Dollar Edition, large number FIRST THURSDAY of every month, Bulletin number each intervening Thursday, 1.00 "

RATES OF ADVERTISING: ONE INCH.

ONE INSERTION, - - - - - \$3.00
ONE MONTH, (3 times) - - - - - 11.25
THREE MONTHS, - - - - - 26.25
SIX MONTHS, - - - - - \$45.00
ONE YEAR, - - - - - 75.00
Rates for larger spaces quoted on application.

New York (Main Office),
Philadelphia,
Pittsburgh,
Chicago,
Cincinnati,
St. Louis,
Boston,
Cleveland,

232-238 William Street,
Forrest Building, 117 119 South Fourth Street,
Hamilton Building, 335-337 Fifth Avenue,
Fisher Building, Dearborn and Van Buren Streets,
Pickering Building, 5th and Main Streets,
Chemical Building, 721 Olive Street,
Mason Building, 70 Kilby Street,
The Cuyahoga, 311 Superior Street,

DAVID WILLIAMS CO., Pub'rs.
THOMAS HOBSON, Manager.
ROBERT A. WALKER, Manager.
H. H. ROBERTS, Business Manager.
GEO. W. COPE, Resident Asso. Ed.
HENRY SMITH, Manager.
WALTER C. ENGLISH, Manager.
EZRA S. ADAMS, Manager.

LONDON OFFICE: Hastings House, Norfolk Street, Strand.

AUSTRALIAN OFFICES: Melbourne, Hardware Chambers, 231 Elizabeth Street; Sydney, Palings Building.

Remittances should be made by draft, payable to the order of DAVID WILLIAMS COMPANY, on any banking house in the United States or Europe, or by P. O. Money
Order on New York. When these cannot be obtained, postage stamps of any country will be received.
Newsdealers: Bookellers in any part of the world may obtain The Iron Age through the American News Company, New York, U. S. A. The International
News Company, New York, U. S. A., and London, England; or The San Francisco News Company, San Francisco, Cal., U. S. A.
Entered at the Post Office, New York, as Second-class Matter.

JULY 3. 1901.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

Manufactured, 9/48 & 16.	
Ingot-	
Lake	174@17 1/2
Ansonia grade Casting.....	164@17

To No. 20 inclusive.	.29	.23	.25	.27	.29	.31	.33	.35
No. 21 22, 23 and 24	.22	.24	.26	.28	.30	.32	.34	.36
No. 25 and 2628	.24 1/2	.27	.29	.31	.33	.35	.37
No. 27 and 2828	.25	.26	.30	.32	.34	.36	.38

Stove Plate Scrap.....	gross ton	\$7.10@	7.1
Burnt Iron.....	gross ton	\$5.00@	5.0